

MATERIALISM AS MORALITY IN THE  
ANWR OIL DRILLING DEBATE: A CRITICAL  
INVESTIGATION INTO THE REIFICATION  
OF SCIENCE, THE MARGINALIZATION OF  
VALUES, AND THE POWER OF  
DISCOURSE WITHIN ENVIRONMENTAL  
CONFLICT

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# ABSTRACT

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Modern science is well established as the institution through which knowledge is legitimated, facts are produced, and credibility is assigned. Operating within the prevailing capitalist socio-political order, science is also controlled by the wealthy elite, whose resources are required for its production, evaluation, and implementation. Beyond disproportionately serving powerful interests, however, science enables the most privileged groups within society to embolden certain understandings of the world and marginalize others, to shape public perceptions, behaviors, and norms, and thus to reinforce the existing social systems and institutions that support their own dominance.

Building on critical scholarship that addresses inequality by problematizing the structures and practices that reproduce power, this thesis examines the prominent and politically opposed positions of the oil industry and mainstream environmentalists in the U.S. policy debate over whether to permit petroleum development in Alaska's Arctic National Wildlife Refuge (ANWR). Specifically, through Critical Discourse Analysis (CDA), I explore how these two 'mid-stream' scientific actors, which have effectively appropriated the wider 'for' and 'against' drilling campaigns respectively, each engage with the generation as well as dissemination of technical knowledge in order to substantiate their arguments and enhance the authority of their claims.

The analysis presented here demonstrates that the hegemonic framing of the ANWR conflict, which I describe in terms of *Materialism as Morality*, reifies scientific expertise whilst burying values beneath assumptions of objectivity and neutrality. It also allows incongruent truth claims to eclipse the many legitimate but competing perspectives, priorities, investments, ideologies, risks, and ethical dilemmas that lie at the heart of the ANWR drilling debate. Moreover, this framing is implicit in the perpetuation of systemic social and environmental injustice. Ultimately, my research argues for a transformative politics that engages all stakeholders in the negotiation of competing interests, the discussion of social values, and the production of scientific knowledge; and above all, which recognizes the interconnectivity of all three.

Keywords: *Alaska, conflict, discourse, environment, energy, expertise, hegemony*

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# CHAPTER 1:

## INTRODUCTION

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### **1.1 INDUSTRY, ENVIRONMENT, & THE POWERS THAT BE**

The Industrial Revolution of the nineteenth century ushered in an era of dramatic technological innovations and steep economic growth. Advancements in energy generation, textile production, agriculture, transportation, and manufacturing led to vastly improved standards of living for many, and unprecedented levels of luxury for the most privileged. Western societies saw increases in life expectancy and population, new patterns of urbanization, the beginnings of organized labor, and political as well as cultural transformation. They also experienced a surge in wealth disparity, however, along with the accumulation of private capital and consolidation of power within large factories. Additionally, soaring rates of consumption paired with expanding fossil fuel-based production systems brought significant environmental consequences.

The seeds of modern environmentalism were planted during the Industrial Revolution, when concerns were first raised about the clearing of forests to harvest timber, the conversion of wildlife habitats into farmlands, and the release of harmful chemicals into the air, water, and ground. As industrial development has continually progressed over the past two centuries, its associated environmental impacts have accumulated and worsened, and also been compounded by a rapidly growing human population. Accordingly, the environmental movement has gained momentum, focus, and urgency. In the United States, environmentalism brought the establishment of several dozen national parks, the banning of the pesticide DDT and other hazardous substances, the naming of the first officially recognized Earth Day in 1970, now celebrated worldwide, and the creation of a federal Environmental Protection Agency (EPA) (Johnson and Frickel 2011, Sandler and Pezzullo 2007, Lytle 2007, Gottlieb 2005, Brulle 2000).

Significantly, the dominant environmental discourses of today do not reject further development or technological advancement. Nor do dominant discourses within business and industry deny the importance of environmental responsibility and stewardship. Rather, narratives of “sustainable development” (Drexhage and Murphy 2010, Brundtland Report 1987), “ecotourism” (Fletcher 2009), “green

building” (USGBC 2013), “renewable energy” (USDOE 2013), “ecosystem services” (Juniper 2013, Gómez-Baggethun et al. 2010) and “maximum sustainable yield” (Punt and Smith 2001), among countless others, abound. These narratives convey a shared desire to expand on the industrial and technological progress that has been made, and at the same time, avoid tampering with the earth’s physical processes in ways that would have potentially devastating or irreparable effects.

There is also widespread consensus now that the fates of humanity and the environment are linked. Leaders from both industry and conservation organizations have endorsed the view that the natural world, rather than simply sustaining human societies, is itself a social phenomenon. This is reflected, for instance, in their respective contributions to the United Nation’s comprehensive Millennium Ecosystem Assessment (2005), the conceptual framework for which “assumes that a dynamic interaction exists between people and ecosystems”, and also “places human well-being as the central focus for assessment” (Introduction and Conceptual Framework, p. 26).

Mainstream environmentalists and resource developers thus overwhelmingly agree that humans construct and produce nature according to our own needs. Where they differ, and markedly so, is in the calculation and prioritization of those needs, and in the determination of how best to meet them. Herein lies the tension at the heart of the issue explored in this thesis.

In the far northeast corner of the U.S. state of Alaska lies a plot of federally protected land designated as the Arctic National Wildlife Refuge. ANWR, as it is commonly known, is valued for its striking vistas and unique biodiversity as well as for its substantial petroleum reserves. As a result, environmentalists, the oil industry and others have long been engaged in heated debate over the region’s natural resource management, and in particular over whether or not the Refuge should be opened to oil development.

The ANWR drilling debate, which fits into an even longer-standing and multinational debate over where and whether to drill for oil, involves a range of stakeholder groups whose interests as well as concerns are extremely varied. As in all environmental and energy policymaking, however, there are winners and losers. The greatest winners are those with the resources and influence to effect legislation



and public practices that reflect their own particular “special” interests. The greatest losers are those whose voices are never even heard.

It would be difficult to dispute that the single greatest winner in the U.S. drilling debate thus far is the oil industry. Top oil companies, such as ExxonMobil, Chevron, and ConocoPhillips, consistently bring in billions of dollars each in annual profits<sup>1</sup>. According to the Wall Street Journal (Mattioli 2011), Chief Executive Officers in Oil and Gas, whose median compensation was 13.7 million dollars in 2010, are paid more than executives in any other sector.

The involvement of the oil industry in politics is also unparalleled. During the 2007 and 2008 election cycles, oil companies contributed 79 million dollars to state and federal political campaigns (Follow the Money 2013). Even more funding flows in the opposite direction though. Despite soaring oil revenues, the fossil fuel industry receives large subsidies from the federal government, primarily in the forms of tax code provisions and tax credits. Between 2002 and 2008 these subsidies totaled 72 billion dollars, as compared, for example, to the 29 billion dollars in subsidies received by the renewable energy industry over that same period (Environmental Law Institute 2009).

The most dramatic success of the oil industry is that it has positioned itself as a consultant to high level government officials on major legislative decisions across multiple policy areas. The first administration of President George W. Bush, for example, acknowledged that its decision to reject the 2002 Kyoto Protocol was due in part to input from the oil companies ExxonMobil and Shell (USDOS 2001). In another example, an executive order originally drafted by the American Petroleum Institute and then issued by President George W. Bush with only slight revisions (NRDC 2002), required that any new regulatory action proposed by a federal agency must be accompanied by a detailed statement of that action’s potential adverse effects on energy supply, distribution, or use (EOP 2001). The signing of that order forced even public health and safety agencies, such as the Food and Drug Administration, the Federal Aviation Administration, and the Environmental Protection Agency, to serve the interests of oil companies.

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<sup>1</sup> According to the companies’ annual reports, net earnings for the 2012 fiscal year totaled \$44.9 billion for ExxonMobil (ExxonMobil 2012), \$26.2 billion for Chevron (Chevron 2012), and \$8.4 billion for ConocoPhillips (ConocoPhillips 2012).

The greatest pushback against the financial and political might of the oil industry comes from mainstream environmentalists, and particularly from their various organizational coalitions. Notable among these is the self-named “Group of Ten” largest and most influential environmental organizations in the U.S. (Gottlieb 2005, p. 167), which has been significantly restructured and informalized since its establishment in 1981, but whose original members remain leaders of the contemporary environmental movement. They and other renowned, broad-based groups, occasionally referred to together as “reform environmentalists” (Brulle 2000), can be characterized by the way they boast exceptional legal and scientific expertise, typically adhere to an oligarchal organizational structure built around such experts, and are associated with the professionalization of mainstream environmentalism. Their own influence and specific ‘wins’ to date are therefore also of interest here.

Direct comparison between the wins of industry and environmentalists is not necessary here, and is also made difficult by the fact that the former is driven by a profit imperative, whereas the latter are driven by social imperatives. In contrast to the oil industry, for instance, environmental groups generate the majority of their income through member contributions rather than market yields. Nevertheless, the handful of environmental organizations with the highest revenues bring in upwards of 50 million dollars a year<sup>2</sup> and, like industry, are active participants in the U.S. political system.

During the 2007 and 2008 election cycles, environmental groups collectively contributed 16 million dollars of their proceeds to state and federal election campaigns (Follow the Money 2013). They regularly lobby Congress, coordinate petition-signing and letter-writing campaigns, and urge action from various high-level government representatives. They also continually hold elected officials accountable to their environmentalist constituents by tracking and reporting individual voting records on priority issues, most notably through the League of Conservation Voters’ “Scorecard” (LCV 2013).

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<sup>2</sup> Brulle (2000), citing data from the United States Internal Revenue Service (IRS), reports that a total of eight environmental organizations earned an income of 50 million dollars or more in 1995 (p. 104).

Representatives from the most renowned mainstream environmental groups (for a sample list of 31, see Brulle 2000) submit testimony to the U.S. Congress on relevant topics, and are sometimes called upon to contribute to government-sponsored scientific investigations. Many significant legislative actions are attributed at least in part to the organizing efforts of environmental groups, including the establishment of protected wilderness areas, the implementation of industry regulations, and the blocking of proposed oil development on numerous occasions, including within ANWR.

Virtually all reform environmental groups in the United States are registered by law as non-profit organizations, which means that the bulk of their proceeds must be reinvested in future initiatives rather than awarded to shareholders or executives. Even so, several employees of these organizations earn over 100,000 dollars a year, and annual incomes for a handful of top executives approach 500,000 dollars (IRS Filing 2009). This latter amount is 100 times less than that of many oil industry executives, but it is still enough to position recipients within the top one percent of income earners in the U.S. (White et al. 2012).

The biggest losers in the drilling debate are not nearly as easily identifiable as the winners, precisely because their positions and perspectives are not prominently featured in the debate. I argue, however, that when two powerful and antipodal lobby campaigns are enabled to so effectively dominate the discussion on important political issues, everybody else loses. In the case of ANWR, the general public are denied access to all but two disparate interpretations of relevant information, and their own wide spectrum of interests and concerns never reaches the media stream. Especially problematic, from the social justice perspective I adopt here (as discussed in detail in section 3.1.2), is the fact that the most poorly represented communities in the drilling debate are frequently the ones with the most to lose.

The research I conducted between 2006 and 2008 towards my Master's degree was an investigation into the interests and concerns of two specific marginalized stakeholder groups (Moyer 2008). The Iñupiat Eskimo people, who are amenable to oil development in ANWR, and the Gwich'in Indians, who oppose it, are both indigenous to the Northeastern Alaskan region and maintain close material as well as cultural and spiritual connections to its land and natural resources. As such, these groups hold uniquely impassioned perspectives and distinct priorities with respect to the ANWR landscape. Yet, inclusion of these groups in the drilling

debate at the national scale is almost exclusively through their alignments with the much more influential oil industry and mainstream environmental groups, respectively.

My Master's research identified how such strategic but strained coalitions afford the Iñupiat and Gwich'in peoples a bit of the political recognition they desperately seek, but also provide the national special interest groups with borrowed claims to local knowledge and legitimacy, thereby ultimately reinforcing the established imbalance of power. That work, and the systemic social as well as democratic injustices it uncovered, serves as the inspiration, and the starting point, for the present study.

In addition to the Iñupiat and Gwich'in peoples, there are numerous other groups invested in the ANWR drilling debate whose voices go unheard, and whose various involvements are ill considered in the political decision-making arena. These include, for example, low-level industry employees, labor unions, the working poor, outdoor recreators, tax payers, business owners, and many more. In fact, I argue that the overwhelming majority of stakeholders in ANWR are underrepresented, and sometimes also misrepresented, in the drilling debate. This is because their many different interests, concerns, and positions are consistently swept up into one or the other, or even both, of the dominant 'for' and 'against' campaigns.

Building on the aim of critical scholarship to address inequality by problematizing the structures and practices that reproduce power, this thesis examines the lobby campaigns of the oil industry and mainstream environmentalists in the U.S. policy debate over whether to permit petroleum development in the Arctic Refuge. Within the critical tradition, however, there are many theoretical perspectives and methodological approaches to choose from.

Some critical scholars focus on recognizing and empowering underprivileged groups, for example by linking social movement theory to strategic resource mobilization and grassroots activism (Bevington and Dixon 2005). Such research is aimed at achieving the kind of justice Nancy Fraser (1997) refers to as 'affirmative', which equally recognizes and validates the rights of all identity groups. Participatory Action Research similarly draws on the pedagogical and emancipatory work of Paulo Friere (1973, 2000) to encourage a greater 'critical consciousness' among oppressed communities, and to engage them directly in investigations of their own experiences and the betterment of their own lives.

Other critical scholars take a top-down approach to tackling social inequity. They strive to dismantle oppression by exposing abuses of power, calling for greater social responsibility (Utting and Ives 2006), and highlighting the vital role of dominant groups and institutions in the restoration of justice (Levitas 2005, Byrne 2005).

In the case of ANWR, the offended group, which I have identified as the underrepresented majority, is bound together, not by a particular set of investments or perspectives, but by a common desire, instilled by the Western democratic ideal and arguably rooted in more universal notions of human dignity as well, to be listened to rather than spoken for (Schlosberg 2004, pp. 522-523; Donnelly 1982). For this reason, and despite the fact that I consider myself a member of the underrepresented majority, it would be both unfeasible and counterproductive for me to speak on behalf of the whole. Instead, my approach follows in the footsteps of the second group of critical scholars mentioned above, who have worked to 'tell truth to power' and to hold prevailing ideas and institutions accountable for their influence. As such, the research presented here aspires to the kind of 'transformative' justice articulated by Nancy Fraser (1997), which considers social inequalities, not as isolated ills, but as symptoms of a diseased social system requiring holistic treatment and structural reorganization.

It may go without saying but I prefer to directly acknowledge that the underrepresented majority, as I have termed it, is not at all a homogenous group. In fact, it could be described as a compilation of numerous identity groups elsewhere described as 'minorities'. Though my research lumps these groups together on the basis of their common underrepresentation, I do not assume that the ANWR conflict holds comparable implications for each of them individually. I also stop short of speculating as to *how* they might similarly or differently represent themselves within the drilling debate if so empowered. It is therefore beyond the scope of this research to explore the perspectives of particular cultural or identity groups within the underrepresented majority. As I describe in the concluding discussion offered in chapter seven, however, many such investigations are needed to shed light on the first-hand experiences and views of different marginalized communities, and would significantly complement the upwards-facing approach of this study.

On a related note, my research does not deny that minority rights sometimes conflict with, and must be defended against, majority will. The critical approach I have chosen in this case, however, as endorsed by Wynne (1975, p. 113) and others, considers a threat to majority rights posed by minority will, and the will of a disproportionately privileged minority at that.

The impetus for the present research is the notion that with great power comes great responsibility. My focus is therefore on the actors who wield the most power in the ANWR drilling debate, and my intention is to hold them responsible for how they use it. Accordingly, the present study involves close analysis of the oppositional discourses of the pro-drilling oil industry and anti-drilling environmentalists, respectively, which together dominate the discussion. Even more specifically though, I am interested in the hegemonic framing of the ANWR conflict that is shared by these powerful rival factions, which I refer to in terms of *Materialism as Morality*.

## **1.2 MATERIALITY, MORALITY, & HEGEMONY**

The dominant environmental discourses of today are largely concerned with reconciling the material interests of development with the material interests of conservation. Associated debates focus on tangible priorities around ecological, in conjunction with economic and social, sustainability. As such they are aimed at ensuring sufficient or even increased, and in some cases more equitable, access to environmental goods and services as we move into the future. Confined to the margins of such debates, however, are discussions of cultural, ideological, or representational inequality, as taken up by such counter-hegemonic environmentalist groups as ecofeminists (Mies and Shiva 1993), deep ecologists (Naess 2010), and others.

As a result, both pre-material ideals pertaining to “what kind of human we aspire to be, and in what kind of human world<sup>3</sup>” (Wynne 2002, p. 460), and post-material, post-modern considerations regarding identity, culture, autonomy and self-expression (Inglehart 1997) are consistently bulldozed by mainstream action-

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<sup>3</sup> Paul Kingsnorth, for example, describes that we should be asking what kind of society we want to live in, but the question we are instead asking is how to power *this* society in low carbon ways (cited in Loftus 2012, p. xvii).

oriented agendas, the underlying ideological, ethical and cultural commitments of which are implicitly assumed. Thus, as I explain more meticulously in chapter four, I employ the term 'materialist' to designate this prevailing conceptual framework, which is endorsed by dominant actors across the political spectrum, and which is propelled by modern science.

Modern science is well established as the chief institution through which legitimacy and credibility are assigned (Habermas 2010, York and Clark 2010, Yearley 2005, Bourdieu 2004, Wynne 2002, Barnes 2001, Hook 2001, Barnes et al. 1996, Barnes and Edge 1982, Habermas 1970.) Scientific knowledge generated within the presumed positivist tradition, which is aimed at prediction and control (Wynne 1975, p. 116, Habermas 1972), is distinguished in the Western world as a superior 'way of knowing'. This has been true arguably since the Age of Enlightenment, and increasingly so alongside the intertwined developments of capitalism (Narayan and Scandrett 2014, p. 8), industrialization (Beck 1992), and environmentalism (Brulle 2000). Scientific facts, correlating to a purely technical understanding of the material world that is free from metaphysical or moral considerations, are similarly reified as Truth. They carry greater authority and efficacy than claims that are instead rooted in, for example, local tradition, community values, logical inference, personal conviction, cultural experience, or religious faith.

In the above ways, science, by which I refer to the institutionally recognized positivist practices through which we understand the material world, is relied upon as a central organizing principle within contemporary society. It is even tasked, by policymakers, lawyers, educators, medical professionals and others, with the arbitration of competing values and perspectives. This point is encapsulated by the phrase *Materialism as Morality*.

That the oil industry and mainstream environmentalists have become such monied and influential special interest groups is indicative of their effective engagement with the reigning scientific establishment, and their adoption of the accepted materialist frame. Essentially, their claims have been widely convincing. The premise of the research presented here, however, is that a materialist framing of political issues is not merely dominant within contemporary society; it is hegemonic (Lukes 2005, Gramsci 1999, Tilly 1991). This is because, in addition to maintaining that science enables superior understanding, a materialist framing of socio-political issues reinforces existing structures of power. Further, it does so, at least in part, by

gaining the consent of disempowered. I address each of these two defining features of hegemony in turn.

Within the prevailing capitalist socio-political order, the benefits that accompany scientific claims are disproportionately enjoyed by those who already possess the greatest share of wealth and influence, two mutually reinforcing assets themselves. Prominent lobby organizations have the ability to hire experts to sift through, interpret, and derive relevance from currently available scientific data. Moreover, they have the resources required to commission new studies that set out to answer their own questions of interest, which can then be interpreted for and communicated to the public at large.

As many critical scholars have noted, particularly within the sociology of scientific knowledge (SSK) and other social studies of science, the realm of evidence-based argumentation belongs to a select pool of experts who have been trained, hired, authorized, and deployed according to powerful interests (Barnes and Edge 1982, p. 248). Though not its explicit function, and certainly not its only, science serves as a political tool made available only to the elite, and is thus implicit in the perpetuation of social inequity within modern societies (Beck 1992). Put simply, cycles of credibility correspond to cycles of dominance.

More troubling than the materialist frame's furtherance of economic and representational inequality, however, is the question of how such inequality is tolerated by the masses and sustained over time. As Tilly (1991) poses, "if ordinary domination so consistently hurts the well-defined interests of subordinate groups, why do subordinates comply? Why don't they rebel continuously, or at least resist all along the way?" (p. 594). Wynne (1975) similarly explores "why [the majority] stubbornly resists change for the better" (p. 114). It is counterintuitive, for instance, that individuals would throw their support behind already dominant political lobby organizations, when doing so further exacerbates their own political underrepresentation.

The answer, brought to consciousness through Antonio Gramsci's (1999) conception of 'hegemony', lies in the notion that it is possible for the dominant frames through which a society perceives the world, by the very nature of their dominance, to be so fundamental to the way people think, and so thoroughly embedded in their day to day operations, as to reject the possibility of alternative



frames even before they can be formulated. Lukes (2005) similarly describes hegemony as the power ‘to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions and preferences in such a way that they accept their role in the existing order of things’ (pp. 11, 28). Thus, hegemony describes a form of dominance that presumes inevitability and appears, within its dominion, as natural.

The environment is, as Alex Loftus (2012) describes, “one specific terrain over which conceptions of the world are consolidated and contested” (p. 85; see also ‘the production of nature’ in Neil Smith 2007). It is also a terrain over which scientific knowledge has vast influence. Even Gramsci himself described scientific experimentation as “the mode of dialectical mediation between man and nature” (cited in Loftus 2012, p. 86). At the same time, scientific knowledge has a unique and heightened capacity to appear natural, precisely because it purports to reflect the world as it naturally is, with no regard for how it otherwise could or should be. This is in accordance with a strictly neutral ethico-political stance, which upholds *Materialism as (its own) Morality*. When scientific reasoning is the presumed basis for environmental and other collective decision-making, however, as achieved through a materialist framing of socio-political issues, it not only appears natural, but has the capacity to be naturalizing.

Particularly pertinent to the social justice imperative of this research is the fact that certain empirical investigations have tended to naturalize difference. Attempts to explain ‘natural’ differences between men and women, for example, have enabled the scientific justification of male infidelity on the basis of reproductive behaviors observed in other mammals (Yearley 2005, p. 69), and female intellectual inferiority on the basis of anatomical characteristics of the brain (Tuana 1989), the ethico-political implications of which are anything but neutral. As feminist empiricists and standpoint theorists (Harding 2002, Smith 1990) note, this naturalizing aspect of science poses the greatest threat to the most disadvantaged social groups, whose disadvantage is so deeply ingrained in the way the world works as to potentially appear natural itself.

Loftus (2012) describes that, “in providing both an analysis and a critique [...] of existing ecologies, political ecologists seek to overturn depoliticized understandings of environmental processes” (pp. xxi-xxii). In the same vein, and for all of the above reasons taken together, I use the phrase *Materialism as Morality* to expose the

hegemonic framing of the ANWR conflict by dominant actors exercising their privileged access to resources, expertise, and influence. It is a frame in which individual values are overshadowed by universal facts, and decision-making is dictated by a partial and 'scientized' (Beck 1992, p. 3) understanding of the material world. More fundamentally, it is a frame in which justice is seen as a subset of Truth, but Truth remains unseen as a subset of power.

Given this premise, the aim of my research is to deconstruct the mechanics of the materialist framing<sup>4</sup> of the ANWR drilling debate in order to reveal its social justice implications. I do this through a critical discourse analysis of the websites of two prominent U.S. lobbying organizations, one from each of the industry and environmental perspectives on the issue of ANWR. The two organizations are Arctic Power and the Natural Resources Defense Council (NRDC), respectively.

Through their participation in the ANWR debate, both Arctic Power and NRDC express a commitment to setting aside emotional attachments and, instead, letting the evidence speak for itself. In doing so, they together seek to divorce facts from values, and take pains to omit all traces of the latter from the conversation. This is not to say that either group overtly denies that it holds particular values, nor that their respective value sets conflict with one another. Each group simply chooses to argue its case on value-free grounds, and then attends to ethics as an ancillary consideration, if at all. There is a sense that, as Mayo (in Wynne 1975) describes of science-policy issues more broadly, "the technical problems must be solved *before* the problem is thrown into the 'political hopper'", (p. 123). Thus, even claims to morality, which are occasionally invoked on both sides of the ANWR issue, are framed in the universal rather than the particular, and are substantiated by material evidence.

As with any manifestation of hegemony, this strategy may seem justified at first glance, and may even appear to indicate fair play by both sides. However, as the present research demonstrates, markedly through the critical discourse analysis presented in chapters five and six, the materialist framing of the ANWR debate by

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<sup>4</sup> Throughout this thesis, I refer to the *Materialism as Morality* frame as simply 'the materialist frame' precisely because materiality is its explicit focus, and morality either perceived as a derivative or eclipsed altogether.

Arctic Power and NRDC is in fact perpetually self-serving and problematic on primarily three levels, which I outline briefly here.

First of all, science, or in other words the systematic process by which we understand the material world, is itself value-laden. The generation and dissemination of scientific knowledge, from the very impetus of inquiry to the implementation of findings, requires judgment, negotiation, prioritization, assessment, and interpretation on the part of its practitioners as well as sponsors and recipients. To portray scientific information as devoid of human values is to provide an incomplete, and potentially inaccurate, version of the material facts.

Moreover, the two versions of ‘the facts’ provided by Arctic Power and NRDC directly reflect the lobby groups’ respective and disparate political interests. Each version, however, is portrayed as objective, incontrovertible, and inevitable, not least in the way it is referred to as ‘*the facts*’. As a result, the two contrasting versions of facts relied upon to determine the appropriate management of ANWR, are presented as mutually exclusive accounts, rather than as mutually enhancing and potentially illuminating interpretations of the available material evidence. They also serve together to indicate tampering by one side or the other, rather than merely representing divergent points of view, thus breeding mistrust among their public audiences and fostering ill will.

Second, the most substantial differences between the pro- and anti-drilling camps are political and ideological rather than technical. To obscure the role of values and the range of interests and perspectives in the drilling debate is to sidestep the very crux of the issue. Even if both sides could agree on the same exact version of the facts, they would undoubtedly still differ in their ideas about the appraisal of various natural resources, the weighing of costs against benefits, and the determination of acceptable levels of risk. Further, it is inescapable that, whatever decisions are made regarding oil development in ANWR, they will carry different impacts for different stakeholder groups. Materialist discourses therefore not only obscure the crucial role of values in the drilling debate, but they also invalidate the diverse experiences, investments, hopes, and fears that shape those values, and in doing so, disenfranchise the people who hold them.

Unlike the far more polarized oil industry and environmental lobbies, numerous stakeholders within the underrepresented majority, including Native groups, labor

unions and the working poor, recognize that their assorted interests in ANWR are not only competing, but also overlapping and intertwined. Many such groups express an eagerness to overcome rather than contribute to the bitter antagonism that has characterized the drilling debate and impeded its resolution over the past fifty years. The greatest potential to move the ANWR debate forward is therefore precisely through the recognition, negotiation, and reconciliation of values differences, as opposed to the continued feuding over data correctness.

I offer a brief disclaimer here about the aim of this research, which perhaps unintuitively, does not entail moving the debate forward. In fact, as I describe further in the discussion section of chapter seven, I am critical of many attempts at compromise between dominant industry and environmental perspectives, which are increasingly driven by neoliberal principles. Such schemes as emissions trading (Bakker 2005, Bailey 2007), wetland banking (Robertson 2004), and the leasing of fishing quotas (Mansfield 2007), for example, aim to incentivize conservation by assigning monetary values to environmental goods and services, which can then be bought and sold on the open market. By merging profit-generation and sustainability into a single agenda, however, these schemes ignore inherent tensions between, for instance, private accumulation and the social good. Even more egregiously, they allow the most elite groups from industry and environmental perspectives to join forces with one another, thus narrowing the control over 'natural capital' (Costanza et al. 1997) to the biggest investors and widening the gap between rich and poor (Smith 2007).

The unresolved issue that commands more urgent attention, in my view, than whether or not to open ANWR's Coastal Plain to drilling, concerns broadening the base of participants included in the debate. This social justice imperative requires a transformation of the socio-political system in which we currently approach the ANWR dispute, rather than simply a plan for mediation between the competing interests already on the table. Coincidentally though, and as illustrated throughout this thesis, there are compelling reasons to anticipate that such a transformation would be conducive to conflict resolution as well.

The third and final 'problem' of the materialist framing of the ANWR drilling debate pertains to the strained relationship between the natural sciences and the social phenomenon of language (Gilbert and Mulkay 1980). Namely, discourses themselves, as defined and discussed more fully in chapter three, perform

ideological jobs. They are living, changing reflections as well as constructions of society. Discourses are shaped by, and also inform, views and values. They provide the tools by which we make sense of the world around us, and determine our place within it.

In communicating the issue of ANWR, Arctic Power's and NRDC's discourses inform us about how to interpret the available science, but they do much more than that too. They instruct us as to which sources of information we should trust or distrust, how to navigate the science-policy interface, and who to include in decision-making. They characterize the appropriate role of government and describe how best to go about resolving social conflicts, as well as how to allocate resources, to conceive of land ownership, to regard indigenous rights, to define success, and to prepare for the future.

All of the above address ethical dilemmas with implications that reach far beyond the ANWR landscape, and beyond matters of energy security or environmental protection. The discourses of the oil industry and environmentalists support divergent ideological standpoints, each of which corresponds to that group's experience and representation of the material world. The dissimilarity in their representations of the world, in turn, stems from the groups' distinctly different political agendas, corresponding value systems, and "ways of seeing" (Rose 2001). Observation and interpretation are thus entangled in a kind of circular logic.

Crucially, the logic that drives the ANWR conflict exclusively reflects the thinking and priorities of the drilling debate's most prominent stakeholders. Paradoxically, the discourses of such stakeholders explicitly champion objectivity while at the same time serving inherently naturalizing and normalizing roles.

In light of the concerns raised above, the following research addresses several questions about the hegemonic materialist discourses employed by the oil industry and environmentalists in the context of the ANWR drilling debate. Namely, how are scientific data on ANWR differently generated, interpreted, represented, and applied by these two groups? Which ideologies are emboldened, and interest groups empowered, by the ubiquitous use of language that is necessarily reductionist and technicizing? Which are disenfranchised or obscured? How exactly does the materialist framing of the debate by two polarized lobby groups disempower the remaining underrepresented majority of stakeholders? And finally, what are the

broader material as well as moral implications of allowing the ANWR drilling debate, and its countless tributary communications, to proceed in this way?

### **1.3 THESIS STRUCTURE**

In addressing these questions, I explore a series of dialectical relationships embedded within the discourses of environmentalists and the U.S. oil industry. Such dialectics are drawn from ongoing debates that span across, and sometimes crop up in between, different branches of the academy. As such, they together highlight the need for an interdisciplinary study that brings associated insights together. The dialectics explored here include relationships between, for example, society and nature (to which much scholarship in human geography and political ecology is devoted), industry and environment (frequently at issue in the work of environmental sociologists as well as conservation biologists and many other natural scientists), dominant and subaltern classes (which is the focus of Marxist and critical approaches adopted throughout the social and political sciences), expert and lay knowledge (often at the heart of indigenous, feminist, and anthropological studies), facts and values (notably of interest to philosophers and historians of science), the particular and the universal (as in the pedagogical studies of Paolo Friere), and most essentially, between materialism and morality (a relationship that has preoccupied philosophers, political and cultural theorists, sociologists of science and knowledge, scholars of social and environmental justice, and numerous others). A wide range of literature thus informs the discussions and analyses provided here. Accordingly, a road map of the general structure of this thesis, and the relevant bodies of scholarship reviewed throughout, follows.

Proceeding from this introduction, chapter two offers a brief history of the Arctic Alaskan region and its people, including clashing notions of sovereignty and natural resource management, particularly between Native groups and Anglo-European settlers. It thus incorporates a review of relevant literature within studies of human-nature relations, political ecology, and environmental conflict. The chapter concludes with an account of the current status of the U.S. political debate over whether or not to allow oil drilling on the Coastal Plain on ANWR, in what is legally named "Area 1002".

In chapter three, I describe the foundations of my research design, beginning with the ontological and epistemological standpoint of my research, accompanied by an

elaboration on the aims laid out in this introduction. I then situate my research within the critical theoretical tradition, and provide a detailed explanation of Critical Discourse Analysis as my chosen methodology for this investigation. Correspondingly, this chapter explores the concepts of hegemony and social justice among other moralizing philosophies. It also examines a range of relevant theories of discourse and approaches to analyzing discourse as social action.

The specific parameters of the present study are subsequently defined in the final section of chapter three. Particular attention is paid to the reasoning behind my selection of Arctic Power and the Natural Resources Defense Council, as the two actors in the ANWR conflict on which my analysis focuses. In doing so, I identify them as politically opposed U.S. lobbying organizations, the discourses of which feature prominently in the drilling debate, and more importantly, are representative of dominant national industry and environmental discourses, respectively. Similarly, this section outlines the steps I followed in reviewing, delimiting, and analyzing these two actors' web-based discourses as the empirical data for this study.

Chapter four describes the terms in which the national drilling debate has been framed, as shaped by and reflected in the discourses of Arctic Power and NRDC. As such, this section centers around the concept of *Materialism as Morality*, focusing on the use of scientific discourses as a rhetorical strategy and associated implications. The literature reviewed in this section is chiefly drawn from the sociology of science: a subdiscipline that explores the social-embeddedness of even the most rigorous and seemingly objective technical investigations. It also contains a further review of critical scholarship, in which a variety of materialist philosophies are located.

Chapter five provides an analysis of the scientific discourses of the featured lobby groups. Thus, it explores "the facts" under consideration in the drilling debate, primarily with respect to the anticipated benefits of developing ANWR and the potential costs to the natural environment. In particular, I explore a selection of technical investigations referenced by the lobby groups, which pertain to the estimated volume of oil contained within ANWR's reserves, the various projections of domestic job creation, and the likely impact of development on the Porcupine caribou herd population. These specific issues are highlighted throughout the discourses of both lobby groups, and therefore key to the current national drilling debate.

Further, the discourse analysis presented in chapter five illustrates the way in which two influential lobby groups have together framed the ANWR debate, specifically in technical, evidence-based terms that edge out any recognition of competing views, values, or priorities; and in doing so, have reinforced their own dominance. Similarly, it identifies certain underpinning and hegemonic ideologies shared by both groups, in addition to the more specific narratives that differentiate their respective political positions.

The above discourse analysis leads into a broader discussion and further discourse analysis in chapter six, which examines how the lobby groups characterize the generation and dissemination of technical knowledge, to the extent that they recognize these processes at all. As such, this penultimate chapter addresses ‘the knowers’ represented within Arctic Power’s and NRDC’s materialist discourses in addition to ‘the known’, as well as on the associated uncertainties, perceived risks, and remaining ‘unknowns’. The analysis and discussion contained in chapters five and six are again informed by a range of academic literature, notably in the fields of organizational behavior, social movement theory, and cultural management, in addition to those mentioned earlier.

Finally, the concluding chapter of this thesis acknowledges its major contributions and limitations, and suggests a range of opportunities for future and further research. In sum, though the ANWR drilling debate features disputes over natural resource management, revenue allocation, energy security, and job creation, the research presented here essentially reveals it as a forum for public coercion by politically empowered special interest groups, and for the further promotion of dominant institutions and ideologies. Ultimately, I argue for a transformative justice that engages all stakeholders in the negotiation of political interests, the discussion of social values, and the production of scientific knowledge; and above all, which recognizes the interconnectivity of all three.



## CHAPTER 2:

# A HISTORY OF CONTESTED MANAGEMENT IN THE ALASKAN ARCTIC

In recent decades, the question of whether to restrict or allow petroleum development within the Arctic National Wildlife Refuge (ANWR) has become a precise point of contention between industry and environmentalists. The wider Arctic Alaskan region, however, has been a site of contested interests and political struggle among numerous stakeholder groups since long before the Refuge was established. That history underpins and continues to inform the current ANWR drilling debate, and is therefore outlined in this chapter. I begin though, with a brief description of ANWR's geographical location and key attributes in order to situate the region, physically and conceptually, within the timeline of events that follows.



Figure 2-1: Arctic National Wildlife Refuge (Encyclopædia Britannica 2011)

## **2.1 GEOGRAPHY, GEOLOGY, AND ECOLOGY**

Approximately the area of Scotland, the Arctic National Wildlife Refuge (ANWR) is a plot of federally managed land within the U.S. State of Alaska. It extends north to the Beaufort Sea and shares its eastern border with Canada's Yukon Territory, as shown in Figure 2-1.

The more than 77,000 square kilometers of the Refuge encompass arctic coastline, the Brooks mountain range that runs horizontally through the middle of the Refuge, the tundra plain at the mountains' base, and the Yukon river basin forests to the south. These varied ecosystems support a plentiful array of flora and fauna, including polar bears, porcupine caribou, and muskoxen, as well as numerous species of fish, sea animals, and migratory birds. ANWR's striking vistas and majestic inhabitants are highly valued by naturalists, wildlife biologists, ecotourists, and environmentalists.

The unique terrain within ANWR additionally supports a variety of geological resources, including ore minerals, such as zinc, lead, copper, and gold (Kropschot 2006), as well as natural gas and substantial petroleum reserves<sup>5</sup>. This latter feature in particular has drawn to the region the acute interest of the oil industry, and other affiliated industries, seeking to recover its rewards. Though the arctic Alaskan region that contains ANWR has enjoyed a nationally prized and sought-after status for just the past few decades, it has been a site of local, commercial, and intercontinental dispute for much longer.

## **2.2 EARLY NATIVE LAND USE**

The earliest known human inhabitants of the region now designated as ANWR were the Iñupiat<sup>6</sup> Eskimos<sup>7</sup>. They are believed to have originally set foot on what is now

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<sup>5</sup> With the fracking boom that has occurred over the past few years, natural gas has become an increasing focus within energy and land use disputes, including the ANWR debate. Petroleum remains the most potentially lucrative resource in Alaska's Arctic, however, and thus continues to serve as the primary driver of the ANWR debate.

<sup>6</sup> Iñupiat (with a "t") is a noun and the plural form of the word describing this Native people, whereas Iñupiaq (with a "q") can be used as a noun referring either to a single member of the tribe or to the Native language, or alternatively as an adjective, as in "Iñupiaq values".

<sup>7</sup> I use the term "Eskimos" here to refer to the Iñupiat people who are indigenous to the Alaskan Arctic, as they frequently describe themselves (ANKN 2013; ANLC 2013; Brower 2013; NANA 2013). I note, however, that the majority of Iñupiat communities outside of

Alaska when they followed ice-age mammals across the Bering Sea land bridge as long as 15, 000 years ago (Naske and Slotnick 1994, pp. 11, 22). As the word “Eskimo” denotes, the Iñupiat people originally belonged to a Yupik language group that encompassed tremendous sub-cultural diversity. By approximately 1,000 B.C. however, the Iñupiat people had broken off from this group and established their own identity, culture and communities along the northern coast.

Accordingly, the Iñupiat Eskimos adopted a maritime culture. They harvested salmon, cod, seal, and walrus for food. Animal oil was burned for warmth, fish skin and walrus intestines were sewn into waterproof clothing, hides were stretched across large pieces of driftwood to form umiaks—rafts that carried sea hunters and travelers, and sun goggles were crafted from ivory tusks and wood. The Iñupiat were also very skilled at decorative tusk and bone carving, as their early small-tool tradition trained them to be (Naske and Slotnick 1994, Hulley 1970). Most notably though, the Iñupiat are believed to be the first to hunt the bowhead whale, and the tribe’s whaling practices remain a significant source of identity and pride today (ANLC 2013; Hess 1999, 1999).

Approximately 5,000 years after the Iñupiat, and also by way of the Bering Sea Land bridge, the Athabascan<sup>8</sup> aboriginal people arrived in Alaska. They quickly moved into the northeastern interior of the state and parts of Canada, where they lived in the drainages of the Yukon River (Naske and Slotnick 1994, Tetraault 2004). The Gwich’in<sup>9</sup> were the northernmost subset of the Athabascan tribe, although their semi-nomadic lifestyle involved perpetual migration and resettlement (Hulley 1970).

As practitioners of hunter-gatherer subsistence, the Gwich’in enjoyed a diverse diet of roots and berries as well as moose, caribou, grizzly and black bears, wolverines, sheep, fish, the eggs and young of several bird species, and other small game (Hulley 1970). The value of animals to the Gwich’in people, however, ran much deeper than that of corporeal nourishment and sustenance. In particular, the tribe’s cultural and spiritual traditions were profoundly shaped by the caribou, and their

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Alaska do not describe themselves as Eskimos, and some also consider the term to be derogatory (ANLC 2013; NNLM 1999).

<sup>8</sup> Also spelled “Athabaskan”, “Athapaskan”, or “Athapascan”.

<sup>9</sup> The Gwich’in people living in Alaska sometimes describe themselves as Indians, in contrast to their Canadian counterparts who prefer the term “First Nation” peoples, but they most frequently refer to themselves as simply the “Gwich’in” (Gwich’in Steering Committee 2012, 2007; CYFN 2013).

early settlements were strategically placed to intercept the caribou herds along their annual migratory routes. The Gwich'in community in Alaska remains known today as the "caribou people" (Gildart 2002).

### **2.3 NEWCOMERS AND A NEW COMMERCIALISM**

The traditional homelands of both the Iñupiat and Gwich'in people were discovered by Russian explorers in 1741, which marked the beginning of the Russian fur trade. Over the ensuing Russian reign, the natural resources upon which both Native groups depended were so depleted, and their livelihoods and social structures so altered, that the total indigenous population in Alaska was cut in half (UAA-ISER 2004, Creed et al. 1988). Almost one hundred years after the arrival of the Russians, New England whalers set foot on Alaska's shores as well, which led to an expanded maritime fur trade and the introduction of U.S. commercial whaling in Alaska.

By the mid-19<sup>th</sup> century, a global culture of nationalism and territorial expansion had become rampant (Potter 1921). In the interests of resource and land acquisition, the United States purchased Alaska from Russia in 1867 for the extremely modest price of 7.2 million dollars (Campbell 2004, p. 3). The decision was a controversial one, however, as the region was considered by some to be "a worthless territory of ice and snow" (Naske and Slotnick 1994, p. 57). This characterization of the land was accompanied by a judgment that the inhabitants of such a deserted and useless region could only be primitive and barbarian savages: a damaging reputation that would jeopardize the credibility and legitimacy of Native groups as either environmental stewards or decision-makers far into the future (Wood and Rossiter 2005, Kendall 1989).

For the twenty years succeeding 1867, the land acquired by the U.S. was leased to the Alaska Commercial Company, which initiated a sealing industry. It also built and operated ships used for transporting people and supplies to and from the area. During this time, the region was being constructed as a center for industrialism and commercialism, and also an area of residence for decreasingly transient Russian and Euro-American traders and their families. Thus, it was moving away from traditional Native subsistence and localized trading practices as the chief economic system. Additionally, the Alaska Commercial Company began providing medical services, establishing schools, and maintaining law and order for the region's

growing population, which posed challenges to the independence and organizational structure of Native communities.

In 1879, in response to an outbreak of violence between Natives and whites, the navy assumed all governing responsibilities. The first Alaskan delegate to the U.S. Congress was elected in 1881, but it wasn't until three years later that military rule finally ended there and a civilian government was established. This new government initiated a range of social and economic developments, such as the implementation of an official education system, although it largely excluded Native groups and their interests from the political process (ANKN 2013).

As of the late 1800's, Alaska's economy was primarily driven by the ongoing fur trade, as well as by fisheries, mining, and increasingly, ivory. The commodification and aggressive exploitation of natural resources by industry threatened whale, walrus, and other sea creature populations, and also severely diminished the food supply of indigenous tribes (Naske and Slotnick 1994). Even more significantly, Alaska became assimilated into the market-based economy of the United States, which further increased rates of consumption, development, and trade, and in which Native groups could not compete (Hulley 1970 in Tetrault 2004, p. 7, McKeenan 1965). This dynamic led to angry accusations by Natives of mistreatment and corruption on the parts of continental settlers (US Commission on Civil Rights 1969).

## **2.4 LEGAL RECONCILIATION AND REDISTRIBUTION**

The end of the 19<sup>th</sup> century saw a period of attempted reconciliation between land use and resource management practices of non-Native Americans with Native groups, although the former's efforts were often selfishly motivated and sometimes egregiously misguided. The Alaska Commercial Company, for example, designed a conservation program intended to stabilize the seal population and thus sustain the sealing industry (Naske and Slotnick 1994). Then in 1898, the Homestead Act of the United States Congress was extended to Alaska, thereby instituting a system of private land ownership and the allocation, as opposed to sharing, of resources. This new system was intended, in part, to alleviate conflict over land use, but was considered by both the Gwich'in and the Iñupiat to be an affront to Native values and practices, which did not involve written or legal appropriations of land (Creed et al. 1988).

Interest in Alaska by the U.S. Congress increased significantly in the early 1900s. Regional agriculture was developed and the Alaska Road Commission was established, but even more consequential were the area surveys and exploration missions financed by the federal government and carried out in response to a rise in the value of gold production (Naske and Slotnick 1994). In 1906, delegates from Alaska were invited to represent their region in the U.S. Congress, although they were denied voting privileges. As Alaska was becoming incorporated into the economic, legal, and political systems of the United States, however, and also serving as a site for the realization of government sanctioned projects and activities, the stage was being set for future territorial disputes between private landholders and governing bodies formally established in the public interest (Blomley 2003).

Also in 1906, in the vein of legitimizing regional practices and procedures through legalization, the Native Allotment Act issued unclaimed plots of land to Native tribes. Again, however, Natives largely viewed this measure as an assault on their livelihoods and traditional land claims, rather than the gift it was professed to be. This was in part because it turned them from hunter-gatherers into title-holding homesteaders. Six years later, Alaska was afforded territorial status that was accompanied by state rights, and by the following year the first territorial legislature had been formed. By this time Alaska's non-indigenous population was booming, local fisheries as well as gold, copper and other mineral industries were thriving, and nearly 500,000 acres had been designated as Native lands, although it was with reluctance that the Gwich'in and Iñupiat accepted their shares (Naske and Slotnick 1994, Creed et al. 1988, ANKN 2013).

While the U.S. government envisioned industrial progress and commercial success as the greatest potential achievements for Alaska in the first half of the twentieth century, other groups held different ideas about the aesthetic and recreational value of the region. For example, the Alaskan Arctic was identified as a natural area of particular interest in a public survey conducted by the National Park Service in 1950. Fascination with the region's vistas and wildlife by naturalists and conservationists was also becoming more widely known, particularly through the nature and travel writings of forester Robert Marshall, scientists George L. Collins and Lowell Sumner, Supreme Court Justice William O. Douglas, and others (USFWS 2013, Kaye 2006).

The economic incentives for consuming natural resources, however, quickly overpowered environmentalists' appeals to preserve them. Seven years after the

National Park Service survey was completed, Alaska's first oilfield was discovered and the determination of developers to extract the region's most profitable natural resources had grown to an unprecedented level. Alaskan residents in particular had high hopes for prosperity in light of the new finding and held expectations that it would stabilize their local economy (Naske and Slotnick 1994).

The now lucrative, populous, and highly commercial Alaska region was granted statehood in 1959 under President Dwight D. Eisenhower. The Alaska Statehood Act explicitly declared that utilization, development, and conservation of all land, water, and other natural resources were to be carried out with careful consideration of maximum benefit for all people (Chinn 2012). Despite this, many Alaskan residents were concerned that overharvesting and exploitation of the region's natural resources would be enabled under federal control, and Native groups in particular feared that their traditional hunting and trapping practices would be restricted (Creed et al. 1988). In line with such anxieties and predictions, Alaska's first oil and gas lease, to the tune of four million dollars, took place in the same year of the state's inauguration (Naske and Slotnick 1994).

In the following decade, tensions between industry, military, environmentalist, and Native land-use agendas in Alaska became palpable. Oil and gas industries struck a ten billion-barrel oilfield in Prudhoe Bay in 1968 and leased it for 900 million dollars (Naske and Slotnick 1994). They also built a 789-mile pipeline from the North Slope to the port of Valdez on the southern coast of the state, known today as the Trans-Alaskan Pipeline. The U.S. military initiated a significant North Slope development operation as well, named Project Chariot<sup>10</sup>, which involved the release of atomic energy to blast out sections of earth that could then be reconstructed into a customized man-made harbor, called Cape Thompson (Vandegraft 1993).

## **2.5 THE ESTABLISHMENT OF ANWR AND APPROPRIATION OF SURROUNDING LANDS**

In 1960, after more than a decade of persistent lobbying, most notably by Wilderness Society President Olaus Murie and his wife Margaret, the Arctic National Wildlife Range was formally established under the direction of President Eisenhower "for the purpose of preserving unique wildlife, wilderness and recreational values"

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<sup>10</sup> Project Chariot, also known as Operation Chariot, was deemed unsuccessful and abandoned in 1962, before its completion.

(USFWS 2013). The accompanying legislation was signed into law by the U.S. Secretary of the Interior under Public Land Order 2214 (PLO 1960).

As individual Native tribes increasingly felt their influence in the decision-making processes about allocation and use of resources and lands dwindle, they banded together in defense of their entitlement to a say. The Iñupiat Eskimos formed a regional Native organization in 1961, called Iñupiat Paitot, which dealt with such issues as the tribe's social and economic development, land claims, and continued subsistence practices (Snapp 1963). Similarly, the Gwich'in people sought representation by the Association on American Indian Affairs, a New York-based charity who had recently achieved non-profit status (AAIA 2013). By 1966, the Alaska Federation of Natives had been formed for the purpose of uniting the effort to achieve what they considered to be fair settlements of Native land claims (Creed et al. 1988). The Alaska Native Claims Settlement Act (ANCSA) of 1971, which was enacted by President Richard Nixon, attempted to appease concerns of indigenous groups as well as settle the steadily accumulating financial claims they had brought to the U.S. government. It offered Natives a greater role in the development plans at work in the region, as well as attempted to bring them aboard the effort to protect conservation lands that had been federally designated as particularly valuable (Chinn 2012, Naske and Slotnick 1994).

ANCSA awarded regional Native associations 962.5 million dollars and legal title to 44 million acres of land within ANWR (U.S. Congress 1971). It also provided for the establishment of 13 regional corporations<sup>11</sup>, one of which was the Arctic Slope Regional Corporation that enabled the Iñupiat village to invest in petroleum development on the North Slope, as well as more than 200 village corporations, among other ventures (Creed et al. 1988). This same corporation joined forces with another Eskimo enterprise, called Nunamiut Corporation, as well as the National Park Service just three years later in order to co-manage certain designated lands according to principles agreed upon by all involved parties. Although it was considered by many Native communities to be ethnocentrically Euro-American and therefore severely flawed, the Iñupiat generally agreed that ANCSA was the best compromise they could expect from the vastly more resourced and powerful United

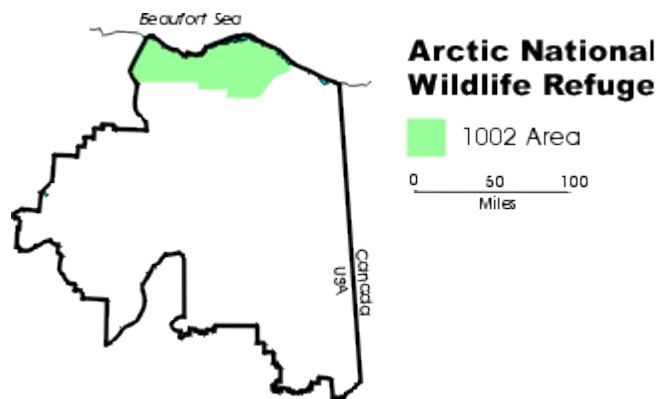
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<sup>11</sup> These were for-profit enterprises, intended to increase the economic prospects of Native groups and settle longstanding land-use disputes.



States government, particularly because the new corporate system awarded them outright ownership of what they already considered to be their own land. The Gwich'in village, however, a characteristically close-knit tribe and independent people, chose not to participate in business partnerships or political endeavors with the government and opted out of the majority of corporate ownership opportunities altogether (in Tetrault 2004, p. 8, Fast 2002).

In 1980, under the Alaska National Interest Lands Conservation Act (ANILCA) backed by President Jimmy Carter, the Arctic National Wildlife Range finally became the Arctic National Wildlife Refuge, as it is called today (U.S. Congress 1980). The slight name change, though not explained in the Public Law that effected it, offers some indication that the ANWR landscape, which had once been a little thought of and rarely visited area, had become a highly sought after region, and was now thought, at least by some, to be in need of sanctuary. ANILCA nearly doubled the landmass of ANWR and also established specific regulations for natural resource management and land use within the Refuge. At the same time, however, it mandated exploration of ANWR's Coastal Plain in an effort to assess the region's oil potential and biological resources. The stretch of land along the Beaufort Sea that was appropriated for exploration, as articulated by Section 1002<sup>12</sup> of ANILCA (U.S. Congress 1980), is represented by the pale green region in Figure 2-2.



**Figure 2-2: Coastal Plain of ANWR, known as “1002 Area” (USFWS 2008b)**

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<sup>12</sup> The Coastal Plain of ANWR is often referred to as the “1002 Area” or “Area Ten-Oh-Two” after the Section of ANILCA that spelled out the federal government’s intentions regarding oil assessment within this region.

In 1983, ANWR's size was increased again by nearly one million acres, but it wasn't for another five years that its boundary was finally extended, under pressure by environmentalists, to encompass its current total area of 19.3 million acres. Today, ANWR includes three federally protected "wild rivers", a wilderness area "where the earth and its community of life are untrammelled by man", and the largest Refuge in the entire National Wildlife Refuge System (USFWS 2013). There are no airstrips, roads, trails, or other developments in ANWR. As U.S. government-owned land, it is currently managed by the United States Fish and Wildlife Service, and subject to the restrictions and regulations of the National Wilderness Preservation System.

## **2.6 PRESENT-DAY LAND USE AND THE DRILLING DEBATE**

The Coastal Plain of ANWR is currently off limits to petroleum development, and will remain so unless and until the United States Congress explicitly opens it for that purpose, as required by the same Section 1002 that mandated its exploration. Substantial volumes of oil have already been extracted, however, from several areas just outside ANWR's borders. The oil fields on Alaska's North Slope are cumulatively responsible for about 20 percent of domestic petroleum production, and have produced over 16 billion barrels in total<sup>13</sup> (EIA 2013b, 2001). Reserves within the Coastal Plain of ANWR are estimated by the U.S. Geological Survey to be between 5.7 and 16.0 billion barrels of oil (USGS 2001), although the reliability and significance of these figures have been opened to a range of interpretations, as discussed in chapter five.

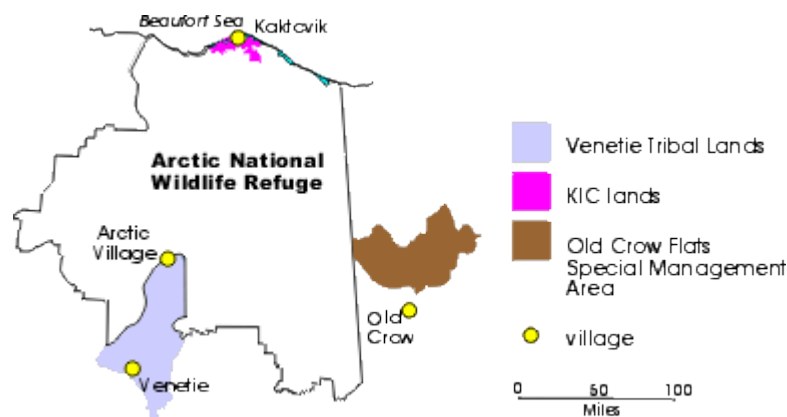
Commercial petroleum production has been in operation on federal territory within Alaska since the 1970s, both inland and off-shore, as the U.S. government owns approximately 60% of the state's total land area and all of the water space beyond a 3-mile distance from the shore (Alaska DNR 2000). The federally-owned National Petroleum Reserve in Alaska (NPRA), for example, which is to the west of the Arctic Refuge along Alaska's northern coast, encompasses a vast 22.8 million acres that were set aside as an emergency energy reserve for the U.S. Navy in 1923, and remains under federal management. Even more petroleum development, however, has been carried out in areas of state jurisdiction.

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<sup>13</sup> This is roughly the quantity of oil consumed in the United States over a 2.5 year period, given current consumption rates of approximately nineteen million barrels of oil per day (EIA 2013a).

The state-owned Prudhoe Bay oil field complex, located just 100 miles west of ANWR, between the Refuge and the NPRA, is the largest oil field in all of North America. In turn, the oil and gas industry is the single largest source of revenue for the state, and according to Alaska's Resource Development Council (2013), is responsible for a third of Alaskan jobs. Oil revenues to the state are also pooled together in an investment known as the Alaska Permanent Fund, the dividends of which are paid out in cash every year to Alaskan residents. The first Permanent Fund payments, distributed in 1982, were 1000 dollars per person, and payments since have averaged approximately that amount<sup>14</sup>. For all of these reasons, the majority of Alaskans are supportive of measures to expand regional oil development, and the state's elected officials have consistently identified drilling in ANWR as a legislative priority.

Though ANWR itself is federally owned and managed, a few small, privately-owned, and restricted-use parcels of land are located within it. The largest among these belong to Native Village and Regional corporations. The Kaktovik Iñupiat Corporation (KIC), for instance, includes a residential village of about 300 people that sits on the Coastal Plain that has been proposed for development (shown in pink in Figure 2-3).



**Figure 2-3: Native-Owned Adjacent Lands (USFWS 2008a)**

Iñupiaq enterprises, such as the Arctic Slope Regional Corporation (ASRC) and its subsidiaries, have invested heavily in petroleum as a highly valued commodity, and

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<sup>14</sup> The average individual dividend payout between 1982 and 2012 was \$1,104.63, with a low of \$331.29 in 1984, and a high of \$2,069 in 2008 (APFC 2013).

therefore enthusiastically support the opening of ANWR's Coastal Plain to drilling. Many of them also work in other industries, such as tourism, commercial fishing, construction, mining, transportation, engineering, financial management, publishing, and communications. Iñupiaq corporations today employ Native as well as non-Native Alaskans, are sustained by more than nine thousand shareholders, and own title to five million acres of land, ninety-two thousand of which lie within the Coastal Plain (ASRC 2013, NANA 2013).

To a lesser extent, the Gwich'in are also joint owners of incorporated lands shared among a handful of aboriginal peoples, however their residential areas fall just outside of ANWR's borders. The Canadian Gwich'in village of Old Crow (shown in brown in Figure 2-3), is adjacent to the Refuge's eastern edge, for example, and the Alaskan villages of Venetie and Arctic Village are located in a cutout of the Refuge, just beneath its southern boundary (shown in light blue in Figure 2-3). Though Gwich'in lands are removed from the coastal region that has been proposed for expanded oil development, and despite that the financial incentives for drilling that apply to the Iñupiat corporations are not relevant in the case of the Gwich'in, the latter are also heavily invested in the management of Alaska's North Slope. The primary reason for this is that the Porcupine caribou herd, on which the Gwich'in people so heavily depend, migrate to the Coastal Plain every spring to give birth to their calves. A desire to preserve and protect the Plain as critical habitat and calving ground for those caribou is therefore the driving force behind Gwich'in opposition to drilling in ANWR.

In 1988, the Gwich'in Nation formed an organization known as the Gwich'in Steering Committee whose explicit purpose was to shield "the sacred place where life begins"<sup>15</sup> (Gwich'in Steering Committee 2012), as they call the Coastal Plain, from drilling. The Nation has also assembled in a traditional ritual of solidarity every two years since then in order to "speak with one voice" to reaffirm its collective opposition to ANWR development. Driven by Gwich'in concerns about the caribou, and by associated concerns of the more influential and well-resourced environmental groups also invested in the ANWR issue, considerable investigation has been carried out on precisely how the Porcupine caribou would be impacted by

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<sup>15</sup> This expression in the Native Gwich'in language reads, "Iizhik Gwats'an Gwandaii Goodlit".

Coastal Plain development. That science is still unfolding but has been a subject of significant political controversy nevertheless, and is explored in greater detail in chapter five.

Though the ANWR drilling debate involves significant implications for local as well as regional stakeholders, economies, and environments, it has largely been usurped by prominent political actors at the national scale. Mainstream environmental groups have taken it on as a critical part of their efforts to reign in industrial development and push back against increased fossil fuel dependence. At the same time, oil and gas companies have focused their research and development endeavors on the remote and wild Arctic region, which they describe as the new frontier. The involvement of these two special interest groups in the ANWR drilling debate is the primary subject of the research presented here, but it is also true that the issue has become notoriously and increasingly divisive along political party lines.

Within the current two-party political system of the United States, Democrats are generally more supportive of public initiatives and inclined to see federal regulation, according to health, environmental, economic and other standards, as an important part of the role of government. As such, they overwhelmingly support the protected status of ANWR as a region of shared public interest and value, and therefore oppose its development by private industry. Republicans, on the other hand, who tend to favor a ‘freer’ market regulatory system that empowers the private sector and limits government intervention<sup>16</sup>, overwhelmingly support the opening of ANWR to development.

Far more in-depth political theoretical analysis than I can provide here would be needed to fully represent the significance of Democratic and Republican party allegiances with respect to ANWR. Drawing from my personal experience as a U.S. citizen, however, as well as from the official platform statements provided by each of the political parties (Republican National Committee 2012, Democratic National Committee 2012), I offer the inadequate generalizations above in an effort to situate the drilling debate within the national political climate more broadly, both of which are conspicuously, intensely, and unavoidably partisan.

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<sup>16</sup> The focus of Republican party discourse has shifted in recent years to that of “small business” rather than corporate interests, but the central neoliberal principles of deregulation, marketization, and privatization remain intact.

As a highly charged and polemical issue, ANWR regularly resurfaces on the U.S. Congressional agenda. Since 1980, a handful of bills containing passages that would alter the protected status of ANWR have been passed by either the U.S. House of Representative or the U.S. Senate. On a single occasion, in 1995, legislation authorizing oil drilling in ANWR was passed by both houses of Congress. Democratic President Bill Clinton exercised his executive power to veto the bill, however, and it was never signed into law. Significantly, the ANWR debate not only conforms to, but feeds the contentious party-line politics in Washington DC<sup>17</sup>. It is credited, for instance, as the first issue to break the spirit of nationalism and bipartisanship between Democrats and Republicans following the September 11, 2001 terrorist attacks (Grunwald 2001).

The ANWR drilling debate has become increasingly intertwined with a host of related domestic as well as global geo-political issues, several of which are explored in the succeeding chapters. It has also risen and fallen in prominence over the past five decades along with other aspects of the nation's social, economic, and political situation. A recent peak occurred during the 2008 presidential election, also coinciding with an economic recession, in which the issue of energy development was closely tied to job creation and strategies for alleviating the national debt. Republican candidates led crowds of supporters in the repeated mantra, "Drill, baby, drill!" (O'Brien 2011), while Democratic candidates adopted the catch phrase, "We can't drill ourselves out of the problem" (Obama 2008).

The ongoing national debate over management of the Arctic National Wildlife Refuge is just as impassioned, polarized, and antagonistic as ever. Chapter five picks up on this unfolding conflict and focuses on the current "for-" and "against-" drilling campaigns, which are overwhelmingly driven by industry representatives and environmental lobbyists, respectively; two groups whose discordant core principles frequently lead them to political opposition. Unless we can chart a new course for the conversation going forward, the state of flux and contention described above, which has characterized the ANWR debate for the past several decades, will likely define its legacy.

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<sup>17</sup> Both houses of the legislative branch, as well as the executive and judicial branches, of the United States federal government all convene in the nation's capital known as the District of Columbia, or more commonly, Washington DC.

## **CHAPTER 3:**

### **RESEARCH DESIGN**

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Over the three sections of this chapter, I illustrate the process by which I have set the vantage point and refined the scope of my research, based on the topic and investigative questions discussed in chapters one and two. To begin, I lay the conceptual groundwork for my study by outlining the ontological and epistemological standpoint that informs my objectives and guides my analysis, and which borrows aspects from a range of established theoretical approaches. I then locate my research within the academic traditions of both critical inquiry and discourse analysis, and offer descriptions of the philosophical perspectives that underpin each of these branches of scholarship, referring to key contributors and contributions throughout.

Building on this conceptual terrain, the second section of this chapter describes my engagement with Critical Discourse Analysis (CDA) as a theoretical as well as practical tool, and as the primary methodology that drives my empirical investigation. The third and final section outlines the specific parameters I have chosen for the present study. I address my decision to focus on the lobby groups Arctic Power and the Natural Resources Defense Council (NRDC) as prominent actors in the ANWR drilling debate who are also representative of the wider pro- and anti-drilling campaigns led by the oil industry and mainstream environmentalists, respectively. Similarly, I offer a description of the steps I followed in sourcing, sifting through, delineating, and ultimately analyzing the websites of these two groups as relevant pools of discursive data.

#### **3.1 CONCEPTUAL FRAMEWORK**

Within the ANWR drilling debate, the materialist discourses of dominant industry and environmental groups each promote the notion of a singular, external, and objective set of truths. In this way, both special interest groups share the same realist ontology, despite their divergent conclusions. Before going any further, it is important to clarify that my research does not adopt their ontological position, and more precisely, that it does not endeavor to decipher which of their proposed realities is, in fact, True. After all, the objects of my analysis are not the objects of analysis in the discourses of such groups, but rather the groups' discourses

themselves. Instead, the ontology and closely associated epistemology that underpin my research are rooted in a dialectical understanding of the relationship between ‘investigator’ and ‘investigated’. Knowledge and reality are thus engaged in perpetual dialogue and reciprocal mediation, each serving as the limiting factor of the other. I elaborate below.

### **3.1.1 Ontological & Epistemological Standpoint**

The combined ontological and epistemological standpoint of my research is one that has been employed in many previous social investigations of science, particularly those which address topics around environmental conflict, risk, or change. Within the sociology of scientific knowledge (SSK), it is typically referred to as “constructivist SSK”, and in other contexts has been described as “constructivist-realism” (Wynne 2002, p. 462) or simply as the “co-construction” stance (Burningham and Cooper 1999, Irwin 2008). The aim behind this standpoint is to supersede a misconceived dichotomy between the objective and the subjective, and to instead understand ‘reality’ as the product of ongoing negotiations between the two. As Alan Irwin has described (in Wynne 2002), constructivist SSK is “not turning away from the reality of environmental problems, but instead capturing a richer, more diverse sense of that reality” (p. 462).

The constructivist-realist standpoint adopts from “constrained” or “mild” relativism (Thompson et al. 1986, Proctor 1998) a deep appreciation for the many and diverse ways that knowledge is generated; and likewise, a recognition of multiple valid realities. These realities exist, however, to varying degrees of adequacy and accuracy. They earn legitimacy after having withstood cultural assessment, evidential scrutiny, logical evaluation, and the test of time. Brian Wynne (2002, p. 462) further describes:

*“...different versions of reality are not only competing in the sense of claiming or denying the reality of an element of nature. They may also be making conflicting claims that a real element is more salient once one gives the issue a particular meaning. The same natural reality thus shows up differently, depending on the intersections it is given with human questions and commitments.”*

My ontological standpoint thus differs from the many ‘purer’ versions of relativism, for example at the cores of poststructuralist and postmodern perspectives, in which ‘truth’ and ‘meaning’ are synonymous. Likewise, constructivist-realism differs from



the purest versions of constructivism and social constructionism, more aptly referred to as 'subjectivisms' (Crotty 1998, p. 5), which restrict the natural world to the confines of the human imagination or reduce it to cultural assumptions. Such anthropocentric and 'anti-realist' (York and Clark 2010) ontologies, which for example render environmental risks as constructed and therefore not 'real' (Wynne 2002, p. 468), would undermine the need for political action and thus for socio-environmental research in support of it.

Within the conceptual spheres of subjectivism, poststructuralism, and postmodernism, realities are continually shifting and morphing according to the social interactions and experiences through which they are realized (Featherstone 2007, Butler 1999). Here my framework is similar in that it acknowledges the multiplicity, malleability, dynamism of reality, as well as the profound roles of human understanding and interaction in its genesis and maintenance. Additionally though, my framework accounts for extra-social, or in other words 'natural', phenomena. As David Livingstone aptly put it, "nature certainly sets limits on what we can say about it" (1995, p. 371). In this way, knowledge is constrained by reality.

Drawing on notions of "critical realism" (Proctor 1998), my research builds on the premise that an external, physical reality exists prior to and independent of our ideas and experiences of it. Human awareness and assessment are extremely valuable tools in reflecting, helping to explain, and making social sense of that 'real world'. At the same time, on account of its intrinsically *metaphysical* nature, knowledge can never fully or flawlessly mirror the physical world. Reality is thus constrained by knowledge, the latter of which is the imperfect and partial but *only* medium through which the former can ever be made accessible.

The somewhat pragmatic assertion above is shared by many post-positivists (Guba and Lincoln 1994), whose theoretical standpoint nevertheless significantly differs from mine. Most importantly, whereas post-positivism and even critical realism task knowledge-builders with the detection of meaning and the uncovering of reality, to the extent possible, I share with Brian Wynne (2000, Lash et al. 1996), Steve Yearley (2005), Bruno Latour (2012), and Ulrich Beck (1992), among others working explicitly within the interpretivist tradition (Gubrium and Holstein 2003), a recognition of the social production of knowledge as itself an integral component -- half of the equation, in fact -- in the co-construction of meaning, and the shaping of natural as well as social "*realities-in-the-making*" (Wynne 2002, p. 462).

### 3.1.2 A Critical Theoretical Perspective

Having laid the ontological and epistemological foundations of my research, I move on now to a discussion of critical inquiry as its foremost theoretical perspective (Crotty 1998, p. 5). The myriad of scholars within this provocative, and sometimes polemical, academic perspective take considerable hermeneutic license with the term 'critical', but their interpretations share certain essential characteristics.

Firstly, any critical project, while setting out to explore uncharted intellectual territory, remains inquisitive and challenging of that which is already known. Processes of deconstruction and problematization are fundamental to critical scholarship, and involve not only posing new questions within accepted structures of investigation and critique, but stepping outside of them in order that the structures themselves may serve as objects of analysis and (re)evaluation. In this way critical scholarship is continually developing and expanding as well as doubling back on itself.

An important justification of the need for the kind of disordering reflection described above stems from Antonio Gramsci's concept of hegemony (Ekers et al. 2012, Gramsci 1999), in which socially accepted ways of thinking and acting are determined by an elite ruling class and then adopted by civic institutions and the society at large, albeit through subtle, gradual, or even accidental means. Bourdieu (1991) similarly describes that "'symbolic systems' [...] ensure that one class dominates another (symbolic violence) by bringing their own distinctive power to bear on the relations of power which underlie them" (p. 167). The trouble here is that the concerns, priorities, and interests of the economically and politically dominant minority are often distinct from, if not contrary to, those of the majority.

Owners of the biggest global corporations, for example, benefit from free market systems that encourage competition, in which the many more small business owners find it hard to compete (Redfern and Snedker 2002). Employers resist minimum wage policies, workers' compensation plans, and union bargaining rights, which serve the needs of employees. Gentrification is lauded by the wealthy but deplored by the poor (Smith 1996), and investors favor high interest rates while borrowers prefer them low. Accordingly, a second key component of any critical contribution to knowledge generation is that it strives to identify and then expose inequalities and injustices perpetuated by the status quo.

The dialectical approach to the relationship between investigator and investigated referred to earlier in this chapter is a useful tool within critical research for exploring other seemingly binary relationships as well, for example between domination and subordination, as problematized by Gramsci. Giroux (1988) similarly describes that critical inquiry must be dialectical in nature so as “to uncover and excavate those forms of historical and subjugated knowledges that point to experiences of suffering, conflict, and collective struggle; [...and] to link the notion of historical understanding to elements of critique and hope” (in Guba and Lincoln 1994, p. 110). Critical methodologies are thus transactional as well as transformative. Likewise, I challenge and reconstruct historically mediated dichotomies throughout this thesis, including between society and nature, production and consumption, individual liberty and social justice, local and global processes, the symbolic and the tangible, and perhaps most apparently, between values and facts.

A third point to be made about critical scholarship finally warrants reference to the academic tradition and associated body of work that is, arguably, its namesake (Forchtner 2011). Critical Theory was developed in the late 1930s and 1940s by a group of German sociologists and philosophers at the Frankfurt School, whose mission was to emancipate the masses from various forms of oppression. Heavily influenced by Marx, critical theorists expanded on his concepts around economic capital and ownership of the means of production through a range of new contexts, for example in the field of arts and culture (Adorno and Horkheimer 1944), in the tradition of positivist science (Horkheimer 1972, Habermas 1970), and more generally, in the production of ideology. Their intent in all of these areas was to uncover practices of domination and “mass deception” (Adorno and Horkheimer 1944) by the ruling class. This social imperative of holding the powerful few accountable to the disempowered many persists as a principle of critical scholarship today.

A final attribute of studies in the ‘critical’ tradition is that they are, to at least a degree, normalizing. That is, in doing the work of diagnosing and addressing systems of social inequality and injustice, critical scholarship necessarily takes a stance on what should or shouldn’t be categorized as such, and thus comprises “an explicitly moral dimension” (Lash et al. 1996, p. 9). As an extreme example of this, many Frankfurt School theorists assigned themselves the task of working in union with the proletariat to formulate a “correct class consciousness”, which, it was

hoped, could replace the “empirical class consciousness” offered by the ruling class (Bottomore 2002, pp. 17, 30).

More recent critical works, including my own, allow for a more flexible understanding, and often multiple understandings, of correctness (Lash et al. 1996). Nevertheless, acknowledgement of the entangled relationship between knowledge and values, and the accompanying charge to differentiate right from wrong, remain central tenets in current critical philosophy and practice.

### **3.1.3 Analyzing Discourse as Social Action**

Akin to the many-layered and unsettled notion of ‘criticalness’, the concept of ‘discourse’, which is also central to this research, is equally fraught with complexity and contestation. A sufficiently broad definition to encompass its vast spectrum of treatments and applications could describe ‘discourse’ no more helpfully than as the domain of meaning-making and communication. At one end of the spectrum, Harvey Sacks (1989, Schegloff 1989) and other conversation analysts systematically examine written and spoken utterances, including the sequences and patterns they conform to, as discourse (ten Have 2007, Tainio 2003). At the opposite end, Foucault and his followers in the poststructuralist tradition use the term to refer to the constantly evolving socio-political structures through which power is wielded, institutional practices are established, and social order is maintained (Hook and Vrdoljak 2002).

Like many other discourse analysts within the critical tradition, I adopt, for the purposes of the present study, an understanding of discourse that falls between the two extremes mentioned above. The discursive materials I analyze as a means of unpacking the drilling debate and illuminating its most prominent debaters are in the relatively straightforward forms of written ‘text’ and transcribed spoken ‘talk’ (McKinlay and McVittie 2008), and to a lesser extent, imagery (Rose 2001). Likewise, I am interested in the use of rhetorical devices, lexical style, and other consequential semantic moves (van Dijk 1993). At the same time, as in Foucauldian Discourse Analysis (Hook 2001), consideration of the historical, political, and cultural context in which discursive materials are created and received, is of critical importance in my research. A macro-sociological approach is required, after all, if systemic inequalities and injustices are to be identified and addressed.

Discourse continually develops and changes with society. As Wodak and Fairclough (2012) describe, it is “socially constitutive as well as socially shaped” (p. 258) in that it both directs and reflects society. Discourses provide the rules and constraining structures in which communal definitions and associations operate, but in doing so also locate sites for the exercise of individual agency and resistance to power. For these reasons, the analysis of discourse is relevant across a wide range of subjects, fields, and pursuits, and it borrows techniques and methods from many different disciplines. CDA in particular, which takes on large-scale and complex social issues, favors multidisciplinary and issue-oriented approaches over ones that might contribute more directly to a specific discipline or paradigm (van Dijk 1993, p. 252). The entire body of discourse analytic work does merge, however, in its collective reinforcement of social constructionism. That is, discourse analysis legitimates and is legitimized by the resolve that it is through social processes, such as the exchange of words and the participation in communicative interaction, that the world is ascribed meaning and thus realized.

### **3.2 METHODOLOGY: CRITICAL DISCOURSE ANALYSIS (CDA)**

Critical Discourse Analysis (CDA) is a relatively new addition to the discourse analytical scene, as it was formally named and attributed a modest cohort of scholarly practitioners as recently as the early 1990’s<sup>18</sup>. It is arguably still settling in to its various applications and finding association with an expanding range of appropriate methods. I use the word ‘settling’ tentatively here though, as CDA is necessarily problem-based, multidisciplinary, and employed as an agent of social change, and therefore distinguished by its uniquely *unsettled* and *unsettling* character.

In light of the above traits, CDA serves as an extremely effective tool in unpacking the complexities of the ANWR drilling debate. It also functions as the common thread through which the underlying objectives and philosophy of my research are joined with its methodological framework and specific methods, the latter of which are discussed in detail in the succeeding section. In the paragraphs below, I focus

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<sup>18</sup> Early noteworthy achievements include the journal *Discourse and Society*, launched in 1990, and the Amsterdam symposium in January of 1991, which led to an ERASMUS exchange program among other international CDA collaborations (Wodak 2009).

on key concepts, traditions, and guiding principles within the critical discourse analytical perspective.

CDA describes an interpretive, systematic, and ongoing process involving academic scholarship as well as political engagement and social responsibility. As a form of macro-sociological investigation, it requires a breadth and depth of cultural, in addition to theoretical, understanding. It also demands a constant attentiveness to particularity and reflexivity. Indeed, many analyses have been accused of falling short of these tasks (Billig 2008, Antaki et al. 2003). However, a number of guidelines have been offered by leading scholars within CDA as means of ensuring that rigor and efficacy are achieved. I expound on these below.

First and foremost, any critical analysis of discourse must be transparent. Ruth Wodak, for example, advocates for the “retroductable” study of language, in which every step of analysis is spelled out in detail for its readership, and accessibility is made an explicit priority (Kendall 2007). In addition to the specific steps taken, any rationales followed, objectives set, and positions endorsed should be articulated as plainly and clearly as possible. In disclosing my political affiliations and scholarly aims at the outset of this thesis, for instance, I identified the underrepresentation of the majority of stakeholders in the ANWR debate as a social and democratic injustice which drives my investigation. I also offer a first-person narrative of my decision making, exercise of judgment, line of reasoning, and arrival at assessments throughout.

The above is particularly important in studies where the analyst deliberately adopts the perspective of the victims of oppression and marginalization, as is typically the case in CDA. As Teun van Dijk explains, “critical scholars should not worry about the interests or perspectives of those in power, who are best placed to take care of their own interests anyway” (1993, p. 253). Whatever the methods and motives that inform analysis, they must be made visible.

Towards the goal of transparency, analysis in CDA additionally requires the practice and promotion of reflexivity. For example, in linking language to social order and knowledge to power, critical researchers must be mindful that analysis is itself a social process in which discourses are reproduced, operationalized, contested, and developed. An inherent challenge in the production of knowledge is that it depends on the observations, assessments, and interpretations of its producers. Reflexive

practice rises to this challenge, not by obscuring or diminishing the role of the producer, but instead by compelling her to make explicit the strengths, limitations, and implications of her positionality<sup>19</sup> (Rose 1997, Massey 1994). As such, reflexivity ensures accountability in research and facilitates the production of situated knowledges (Haraway 1988), and thus more fully informed and contextualized analyses.

Knowledge generated through critical analysis further encourages reflexive practice by all citizens and in all activities, including those outwith the field of research. In line with the aims of critical theory to enlighten as well as uplift the downtrodden in society, CDA “enables human beings to emancipate themselves from forms of domination through self-reflection” (Wodak and Meyer 2009 p. 7). It accomplishes this by demonstrating as well as inspiring the kinds of political awareness and civic engagement that lead to productive social change, and in doing so, fostering a more informed and empowered population.

Finally, the act of analysis involves persistent negotiation between the empirical and the theoretical. Numerous scholars have described the inescapably iterative process between examination and explication in analyzing discourse, and in as many ways. Lyn Richards (2005), for example, purports that discourse must be analyzed through a process of “data-theory bootstrapping” (p. 149-150), in which the pool of data is continually revisited and reconsidered by the researcher as patterns emerge within it and particular illuminating theories gain momentum or focus. Vice versa, such patterns and theories are tested, developed, reinforced, or in other cases abandoned, through further and deeper exploration of the data. Wodak and Meyer (2009) similarly describe that all approaches in CDA “proceed abductively, i.e. oscillate between theory and data analysis” (p.19). In other words, CDA utilizes inductive reasoning, which follows from immersion in the setting or subject to be investigated, as well as deductive reasoning, which builds on preexisting ideas and established principles. As such, the tasks of data analysis and theory construction in CDA necessarily go hand in hand.

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<sup>19</sup> A more comprehensive personal (and political) reflection on my positionality, as relevant to this research, is offered in Appendix C.

Like the methods of critical discourse analysis employed by Wodak (1997, 1990), Fairclough (1995), van Dijk (2000, 1991), van Leeuwen (1996), and others (Forchtner 2011, Schlosser 2006, Kwan 2002, McKenzie 2003, McElhinny 2006), my method of analysis primarily involves exploring the connections between linguistic mechanisms at the textual level and embedded ideologies at a socio-structural level. As such, it involves the identification of grammatical and literary devices, such as nominalization, categorization, legitimation, attribution, implication, presupposition, and various forms of argumentation, as well as the use of metaphor, hyperbole, paradox, irony, euphemism and other rhetorical tactics (Jensen 2012, Billig 2008, van Dijk 2006a, Dixon and Hapke 2003, Tainio 2003, Kitzinger and Firth 1999). Moreover, it considers how such mechanisms are employed in either resistance to or reinforcement of established social structures, dominant ideologies, and cultural norms.

While there are many unique advantages of using CDA, the theoretical perspective also comes with a particular set of challenges. The first of these is that, in order to reveal systemic inequalities or injustices, the researcher must be well acquainted with the system in question, but not so immersed that she is unable to identify, describe, and reflect on it. To reiterate an earlier point, critical discourse analysts consider awareness of the historical, cultural, and socio-political contexts in which discourse is produced and reproduced essential to understanding discourse itself. For this reason, researchers are often ill-equipped to critically analyze discourses that exist outside of their own realms of familiarity<sup>20</sup>. At the same time however, any researcher who is fluent in a particular discourse has also likely been influenced by its associated hegemonic forces, which obscure the status quo behind a veil of inevitability and thus hinder the envisaging of alternatives. This conundrum must be navigated carefully and meticulously by practitioners of CDA through its guiding principles of reflexivity and problem-based research.

A second inherent challenge in CDA, as in all discourse analysis, is that it relies on language constructs in order to deconstruct language. Wodak and Meyer (2009) describe that CDA strives to be “text-extending” (p. 23) by connecting mere words and phrases to their associations, audiences, and broader spheres of expression,

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<sup>20</sup> This may be one reason that discourse analysis, which developed within the Western academic tradition, has yet to take hold in other parts of the world, where expanded notions and classifications of text, talk, and other forms of communication might be required.



understanding, and organization. Simultaneously though, CDA conforms to and reinforces certain structures and rules of language use in order to communicate its own messages, and is thus “text-reducing”. Though this dynamic could be seen as hypocritical, Billig (2000) and others point to it as a reminder of the power of discourse, of the importance of discourse analytic approaches to major social issues, and of the need to continually push CDA to its steadily expanding limits so as to avoid simply replacing one dominant communication scheme or mode of understanding with another.

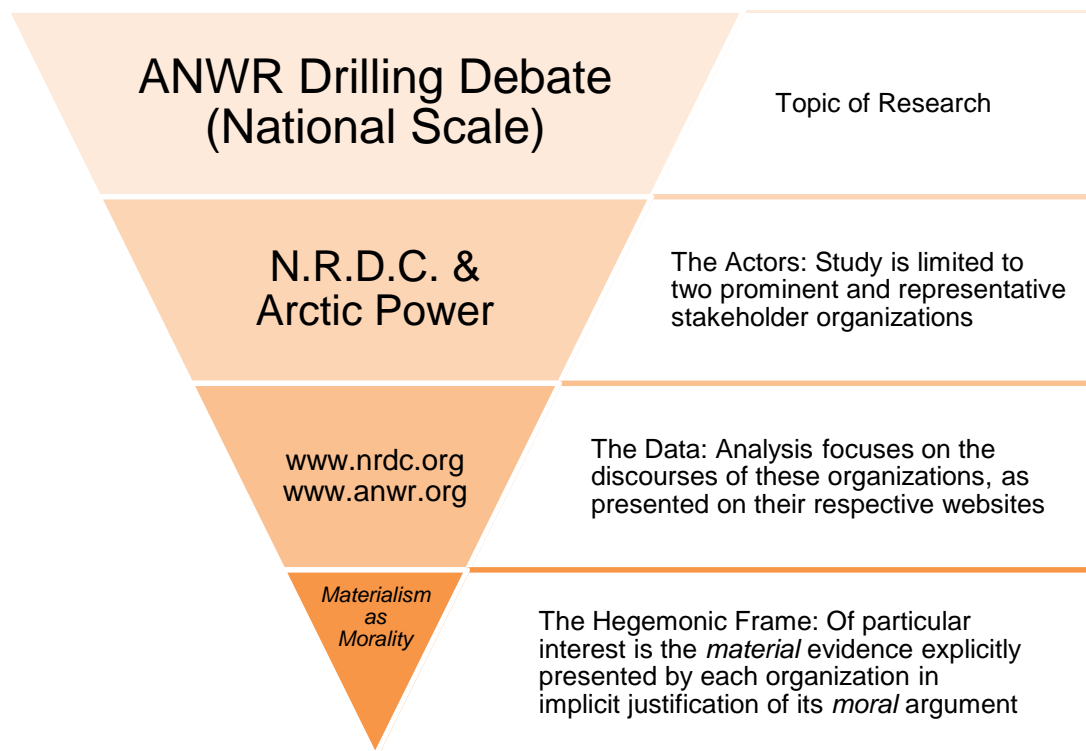
Thirdly, CDA is a target for criticism not only from within its own ranks, but also from its peers outwith, particularly given the “broad resonance of anticonstructivism among the scholarly community” (Proctor 1998). Critical discourse analysts, like the majority of constructionist and qualitative researchers, carry little clout with those who see the uncovering of Truth as the primary goal of research. If we were all positivists and post-positivists, however, the complex issues and social phenomena that lend themselves to neither reliability nor verifiability would remain unexamined and mysterious. The work of CDA, therefore, involves constructing rather than revealing theories, interpreting in addition to identifying cultures and perspectives, and exploring as much as explaining the social world. It requires broad understanding as well as detailed description, and acknowledges both structure and agency in unpacking the relationship between text and context. Ultimately, unlike in other fields where mastery of a prescribed skillset and adherence to time-honored conventions serve as indicators of validity (Fine 2006), in CDA the merits of analysis must speak for themselves.

Lastly, critical discourse analysts are challenged by having to walk the perceived line between social scientific research and political argumentation. Wodak and Meyer (2009) describe this balancing act as the source of some controversy in CDA, but many scholars embrace it nonetheless. Just as Frankfurt school theorists warned against drawing an absolute distinction between knowledge and human interests, so do CDA scholars assert that their research ought not to be divorced from its applicability. Researchers across the social sciences, in fact, have blurred the line between scholarship and advocacy, for example by emphasizing the need for theories that speak directly to practice, just as practice informs theory (Bevington and Dixon 2005). CDA scholars in particular are “unabashedly normative” in their aim to expose and mitigate inequality and injustice, and are in this sense, “social

and political scientists, as well as social critics and activists” (van Dijk 1993, p. 253). Accordingly, many critical discourse analysts, myself included, appropriately and unapologetically conduct problem-based investigations that, we hope, will directly inform theory-oriented action plans.

### **3.3 PARAMETERS OF STUDY**

Following from the conceptual framework and methodology described above, this final section outlines the steps I carried out in narrowing the scope of my research, namely by limiting my study to two dominant actors in the ANWR drilling debate, and by identifying their respective websites as my primary sources of discursive data. The second and third levels of Figure 3-1 (labeled ‘The Actors’ and ‘The Data’, respectively) illustrate these two important steps in determining the scope of my research and refining the focus of my discourse analysis. I discuss each of them in turn below. The fourth level, at the bottom of Figure 3-1, will be addressed in chapter four.



**Figure 3-1: Scope of Research**

### 3.3.1 The Actors

Drilling in ANWR essentially became a topic of conversation in the United States because it was proposed by one of the most influential economic and socio-political actors of the twentieth century – the oil industry. It then became a topic of debate when the industry’s proposal met with resistance from another major player on the scene – mainstream environmentalists. In pursuing the research questions laid out in chapter one, I have selected a single prominent, representative organization to stand in for each of these pro- and anti-drilling umbrella groups. They are Arctic Power and the Natural Resources Defense Council (NRDC), respectively. I have chosen these organizations carefully and strategically on the basis that their memberships, principles, initiatives, and discourses typify those of the powerful coalitions with which they are each aligned, as described in detail below.

Support for oil development on Alaska’s North Slope comes primarily from industries, and in particular fossil fuel corporations, including such organizations as the Alaska Support Industry Alliance, Alaska State Chamber of Commerce, Resource Development Council, Alaska Trucking Association, Alaska Oil & Gas Association, Anchorage Chamber of Commerce, Alaska Miner’s Association, Alaskana Pipeline, and Exxon Mobil. The argument offered by these organizations and their fellow drilling proponents, in short, is that America<sup>21</sup> needs to increase its domestic oil production in the interests of political and energy security, and that developing ANWR would accomplish this while also creating jobs, generating revenue, and exercising innovative technologies (Arctic Power 2013c, Alaska Support Industry Alliance 2011, Resource Development Council 2002).

Arctic Power is a self-proclaimed “grassroots, non-profit citizen’s organization” (Arctic Power 2012) that represents all of the above companies and pro-industry establishments, among numerous others. As a tax-exempt organization that operates under section 501(c)(6) of the federal tax code (NCCS 2013), its remit is to improve the ‘business conditions’ of a particular industry (Internal Revenue Service 2013). In the case of Arctic Power, that industry is the oil industry; and even more

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<sup>21</sup> I use “the United States” and “America” interchangeably here, in agreement with the discourses of both Arctic Power and NRDC, though note the ethnocentricity of the latter term, which excludes the many other countries contained within the North, Central and South Americas.

precisely, the organization has narrowly positioned itself as a single-issue lobby group with ANWR as its focus.

Arctic Power wholly endorses the pro-drilling argument in the ANWR drilling debate, as one hundred percent of its lobbying efforts are aimed at garnering support from both citizens and elected officials for opening ANWR's Area 1002 to oil development (Arctic Power 2012). The group's creation in 1992 was enabled by the support of the state government of Alaska as well as such oil industry giants as Exxon Mobil, ChevronTexaco, BP, and ConocoPhillips (Cassidy 2005). Its current support base is comprised of 10,000 members including The Energy Stewardship Alliance, which is backed by the Petroleum Councils of 27 U.S. states (Arctic Power 2012). For this reason, Arctic Power's position and participation in the drilling debate emphatically reflect those of the oil industry on the whole, and therefore serve to characterize them in the discourse analysis presented in this paper.

On the other side of the issue, support for the continued prohibition of drilling on the North Slope stems predominantly from environmentalists and animal rights groups, including such organizations as Oil On Ice, Arctic Protection Network, Alaska Conservation Foundation, Alaska Wilderness League, Arctic Wildlife, Defenders of Wildlife, Arctic Connections, Northern Alaska Environmental Center, Sierra Club, U.S. Public Interest Research Group (Alaska), and World Wildlife Fund. These organizations refute the above argument of drilling advocates by claiming that oil development on the North Slope would needlessly threaten the region's unique and fragile flora and fauna, and also contribute to global climate change, only to recover a minimal amount of energy, the demand for which should be reduced rather than met (Sierra Club 2013, NRDC 2011, Defenders of Wildlife 2008).

Renowned, even among the prominent environmental groups listed above, the Natural Resources Defense Council (NRDC), is a "dominant force" (Gottlieb 2005, p. 196) within the mainstream environmental movement and a highly visible actor in the ANWR drilling debate. NRDC is also an original member of the 'Group of Ten' largest and most influential U.S. environmental organizations, established in 1981 (Gottlieb 2005, p. 167) and more recently reformed and referred to as the 'Green Group' (Barnett and Terrell 2001, p. 15; Adler 1995, p. 98).

NRDC is both a not-for-profit environmental action organization, and also a not-for-profit action fund, both of which qualify for federal tax exemption. The former,

designated as a 'charity' under section 501(c)(3) of the federal tax code (Internal Revenue Service 2013), functions as an educational and humanitarian organization, and is therefore restricted in the amount of financial and other resources it can devote to influencing legislation, election results, or other political decision-making<sup>22</sup>. The latter, however, operates as a 'social welfare organization' under section 501(c)(4), and is primarily a lobbying arm directly aimed at political action, grassroots mobilization, and legislative reform. Though the budgets, activities, personnel, and other logistical considerations of these two branches of NRDC are strictly kept separate for legal and recordkeeping purposes, the discourses generated by each, which are the focus of my research, are indistinguishable.

NRDC was founded in 1970 by a small group of lawyers, and with funding from the Ford Foundation (The Bridgespan Group 2013), towards the aim of stepping up scientifically informed legal precedents for environmental responsibility and accountability. Since then, total foundation funds, from Ford and other companies, have fallen to just 10% of the organization's total income, its membership has risen to 1.2 million, and its staff pool has grown to incorporate numerous lawyers, scientists, policy-analysts and other professionals (NRDC 2012c). NRDC also enthusiastically supports and ardently reiterates the anti-drilling argument laid out above.

NRDC has been at the forefront of the campaign to maintain the protected and development-free status of ANWR for over thirty years and is referenced by numerous other environmental groups, media outlets, and scholarly journals reporting on the issue, among them *Grist Magazine* (Little 2005), *The New York Times* (Egan 1991), *Government and Policy* (Ember et al. 2001), *National Public Radio* (Morning Edition 2001), and the *Sierra Club* magazine entitled *SIERRA* (Sierra Club 2004). Additionally, NRDC is frequently the target of attacks by pro-drilling groups, including *Arctic Power* (see, for example, *Arctic Power* 2013a, 2013b), who seek to derail the anti-drilling campaign or discredit its affiliates.

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<sup>22</sup> All groups registered under section 501(c) of the U.S. tax code are considered non-profit organizations, and are exempt from paying certain federal income taxes. 501(c)3 organizations in particular, however, are frequently distinguished from the other subsets of "nonprofits" in that they are considered charitable organizations. As such, their donors receive individual income tax deductions. 501(c)3s are also more restricted than other types of 501(c)s from engaging in political activities, such as lobbying or campaigning.

Unlike Arctic Power, NRDC isn't focused solely on the ANWR conflict, but instead participates in a range of socio-political debates and has taken on numerous environmental issues. Nevertheless, the drilling debate is so central to lobbying efforts by NRDC that the organization has identified ANWR as one of only a dozen or so high priority "unspoiled wildlands in the Americas under threat of destruction," (NRDC 2012b) and featured it as part of their BioGems Initiative to help ensure that it remains undeveloped. Additionally, whereas other environmentalist groups focus their attention on an individual aspect of the drilling debate, such as protecting the region's large animals (Defenders of Wildlife 2008), warning against the projected risk of oil spills and global dependence on oil (Exxpose Exxon 2011), or assessing the negative impacts of proposed development to Native residents of the area (Indigenous Environmental Network 2011), NRDC is concerned with all of the above. The group, whose stated mission is "to safeguard the Earth: its people, its plants and animals, and the natural systems on which all life depends" (NRDC 2012a), is therefore broadly representative of the collective position of mainstream environmentalists in the ANWR drilling debate.

### **3.3.2 The Data**

My immersion in the data relevant to the research presented in this thesis began in 2006, when I began researching the ANWR drilling debate towards my Master's degree in Geography. At that time, my focus was on the Iñupiat and Gwich'in indigenous groups, who both reside within the ANWR region, and their respective involvements in the drilling debate. I also considered how their local discourses intersected, and often contrasted, with those of the much more prominent environmental and industry stakeholder groups at the national scale.

An observation I made then but did not pursue in any depth, as it did not fit within the scope of my Masters research project, was that, for the indigenous groups, the various questions of land use and natural resource management in northeast Alaska are deeply personal, spiritual, and intensely emotional. The Iñupiat and Gwich'in speak almost exclusively in the first person about the issue of drilling in ANWR. They express concerns about being able to sustain their own livelihoods, about maintaining sovereignty over the lands they consider home, and about preserving the deeply rooted traditions and sacred values of their ancestors, which are all intimately tied to the natural environment. They also talk about wanting to ensure a

progressive and prosperous future for their children and grandchildren in what feels like a rapidly changing and increasingly global socio-economy (Moyer 2008).

It also stood out to me then that, in contrast to the local indigenous groups, both the oil industry and environmentalists were approaching these same questions of land use and resource management much more scientifically, and in a way that seemed explicitly *impersonal* and *unemotional*. In fact, each group promoted the idea that it remains objective in reviewing the relevant material evidence, and defers to the facts as a guide for determining the right course of action. This juxtaposition, and in particular the mutually 'disinterested' positions (Yearley 2005, p. 52, Kant 2001, p. 91) of the national stakeholder groups, lingered in my thinking even after I had completed my Master's thesis, and eventually led me to the present study.

I provide the recent history above in order to explain that I became familiar with the discourses of Arctic Power and the Natural Resources Defense Council, and thus with the pool of data relevant to my PhD research, several years in advance of having identified or articulated *Materialism as Morality* as its focus. Even at the outset of my investigation into this theme, I was "working up from the data" (Richards 2005, p. 67-84), to borrow Lyn Richards' phrase. My inquiry was broad and inductive in the sense that it was guided by an initial set of open-ended research questions, as laid out in chapter one, rather than by a rigid or prescribed system of demarcation and classification (see "inquiry-guided" research in Mischler 1990). Nevertheless, in hindsight I am able to describe in detail the steps I took to revisit, update, delineate, and analyze my dataset.

The official websites of Arctic Power and NRDC served as the central hubs of my data collection for the present study. My data is therefore entirely located within the public domain, as I articulated in my application for ethical approval to conduct this research at Queen Margaret University. Approval was granted on 18 October, 2011 by my Director of Studies as well as the Head of the Psychology and Sociology Division, and in accordance with the guidelines established by the Queen Margaret University Research Ethics Panel. Similarly, all images included here have either been granted copyright permission by the creator, are located within the creative

commons, or have been sourced from open access websites that do not indicate any restriction on reproduction or use<sup>23</sup>.

I have limited my data search to the websites of Arctic Power and NRDC for primarily three reasons. First, we live in an “information age” (Castells 2011), in which our lives and daily activities are profoundly shaped by the vast quantities of knowledge that sit at our fingertips, and it is the internet, more than any other single medium, which brings them there. Moreover, as the world wide web is “now such a key space for enacting social practice” (Mautner 2005, p. 810), the websites of Arctic Power and NRDC serve not only as vital outlets for the dissemination of each organization’s message, but as primary sites for the construction of their respective social identities (Saichaie 2011), and thus agents of intra-organizational cohesion. Official website data therefore provides a more unified view of the collective values, ideologies, and operating principles of each lobby group than would, for example, data from focus groups with individual employees or lobbyists, or even interviews with key executives.

A second advantage of reviewing website data is that it enables me to engage with the discourses in much the same way as other public audiences do. This is important because I am interested in what the organizations present to the population at large, rather than to specific constituent or opposition groups, or to a researcher asking particular questions behind closed doors. Furthermore, I exercise a hermeneutic of suspicion (Leiter 2004) throughout my analysis, which requires that I scrutinize the lobby groups’ standpoints and underlying motivations, and the implications of their communications, beyond those explicitly articulated or acknowledged by the groups themselves.

Third, website data encompasses a vast and “versatile” pool of discursive content (DiMaggio et al. 2001, p. 308). Both of Arctic Power’s and NRDC’s websites, for example, contain numerous PDFs of documents that the groups similarly distribute in hard copy format at campaign events or by post. They also contain links to

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<sup>23</sup> This is the case with content reproduced from the websites of NRDC and Arctic Power, the former of which offers no stated policy on the restricted use of website content, though individual images displayed on several pages are copyright protected and clearly designated as such, and the latter of which explicitly states that it “cannot respond to requests for use of [displayed] pictures for student reports or commercial use”.



PowerPoint presentations that have been orally delivered by organization spokespersons, as well as video and audio clips, photos and other imagery, and even “media kits” made available by the lobby groups for external re-distribution through an assortment of independent broadcasting outlets. Organizational website data therefore contains a substantial amount of redundant discursive material, which can be selectively retrieved through alternative means, but which has been aggregated into a single medium.

In each case, the organization’s website represents its most current, comprehensive, and accessible communication outlet, which is also targeted at a wide public audience; features particularly well suited to Critical Discourse Analysis (Mautner 2005), which I explore in greater detail in the following chapter. The exceptionally high volume of information contained within the two websites, however, in addition to the fact that they are both in perpetual flux, meant that an exhaustive examination was not possible. Instead, I exhaustively scrutinized the home page of each organization’s website (screen printed for visual reference in figures 3-2 and 3-3, respectively), and then utilized a variety of techniques to sift through the remaining available data as well as to target pages within the websites that were likely to be relevant to my study.

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May 08th

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Home

HEADLINE




### Petition to Open the Alaskan 1002 Coastal Plain

The Alaskan 1002 Coastal Plain was set aside by the U.S. Congress specifically for energy exploration. It is believed that this piece of land, roughly 1.5 million acres, contains billions of barrels of oil. All legislation related to the 1002 Coastal Plain calls for a limit of 2,000 surface acres for equipment and site pads. This means that less than 1% of the 1002 Coastal Plain would be impacted by surface development. This stretch of land is immediately next to state land where the same development has existed for decades.

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PEOPLE




### Alaskans Strongly Support ANWR Development

Over 78% percent of Alaskans support exploration and production on the Coastal ...

- [Residents of ANWR Support](#)
- [Alaskan Natives Support Development](#)
- [Inupiat Eskimos](#)

ANWR BASICS




### Facts about the Arctic National Wildlife Refuge

The U.S. Department of Energy has a good primer on the Arctic National Wildlife ...

- [Arctic National Wildlife Refuge: the issue](#)
- [Top ten reasons to support ANWR development](#)
- [What is ANWR and where is it?](#)

POLITICS




### Secretary Bearish on Alaska OCS exploration

Washington DC- Secretary of Interior Salazar has put forth a bearish view toward...

- [NPR-A Management Plan turns "Reserve" into "Refuge"](#)
- [U.S. House Votes to Open ANWR!](#)
- [Hastings and Boehner Push ANWR](#)

VIDEO




### Jay Leno on drilling in ANWR

Jay Leno takes the Democrats to task for blocking oil drilling in the Arctic Nat...

- [Senator Stevens Confronts Congress for Blocking Oil Exploration](#)
- [Stevens and Inhofe Advocate Opening of ANWR Before the Senate](#)
- [Don Young Fights to Open ANWR](#)

BACKGROUND




### ANWR Oil - Politics and Logistics

Many in America have felt the pain of high gasoline prices recently and often di...

- [Central Arctic caribou herd thrives, population at record high](#)
- [Making the Case for ANWR](#)
- [Drilling in Refuges](#)

TECHNOLOGY




### Today's drilling leaves a small footprint

New oil development technology, developed over 30 years on Alaska's North S...

- [BP Proposes Development With No Pad, Flexible Pipeline](#)
- [The Value of 3D Seismic](#)
- [New Standard Set with Double-hulled Double-screw Tankers](#)

OCS




### Arctic OCS Exploration Hopeful

With the Environmental Protection Agency air discharge permits in hand, Shell oi...

- [Outer Continental Shelf \(OCS\) Oil and Gas Leasing Program](#)
- [OCS Oil and Gas Leasing Program 1976-2004](#)
- [Energizing America](#)

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- [United States Senate Takes on Issue of Alaskan Legacy Wells](#)
- [Senate Votes on Energy Amendment](#)


Newsflash

- [Arctic Power February/March Update](#)
- [Petition to Open the Alaskan 1002 Coastal Plain](#)
- [Second Arctic Joint Lease Sale Nets Windfall for State, Little for Feds](#)
- [Arctic Power Responds to Senate Letter to DOI](#)
- [There is a Job that Needs to be Done, That we Expect to be Done](#)
- [Secretary Bearish on Alaska OCS exploration](#)
- [NPR-A Management Plan turns "Reserve" into "Refuge"](#)
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A QUOTATION

“Developing ANWR offers an opportunity to reduce our dependence on foreign oil and improve our national security,” said U.S. Senator Lisa Murkowski (R-AK).

Copyright © 2005 - 2013 Arctic Power - Arctic National Wildlife Refuge. Site by Frontier Communications - Anchorage, AK

[RSS](#)
[CSS](#)
[XHTML](#)

Figure 3-2: Arctic Power Website Home Page<sup>24</sup>

<sup>24</sup> Retrieved from <http://www.anwr.org/> on 8 May, 2013.

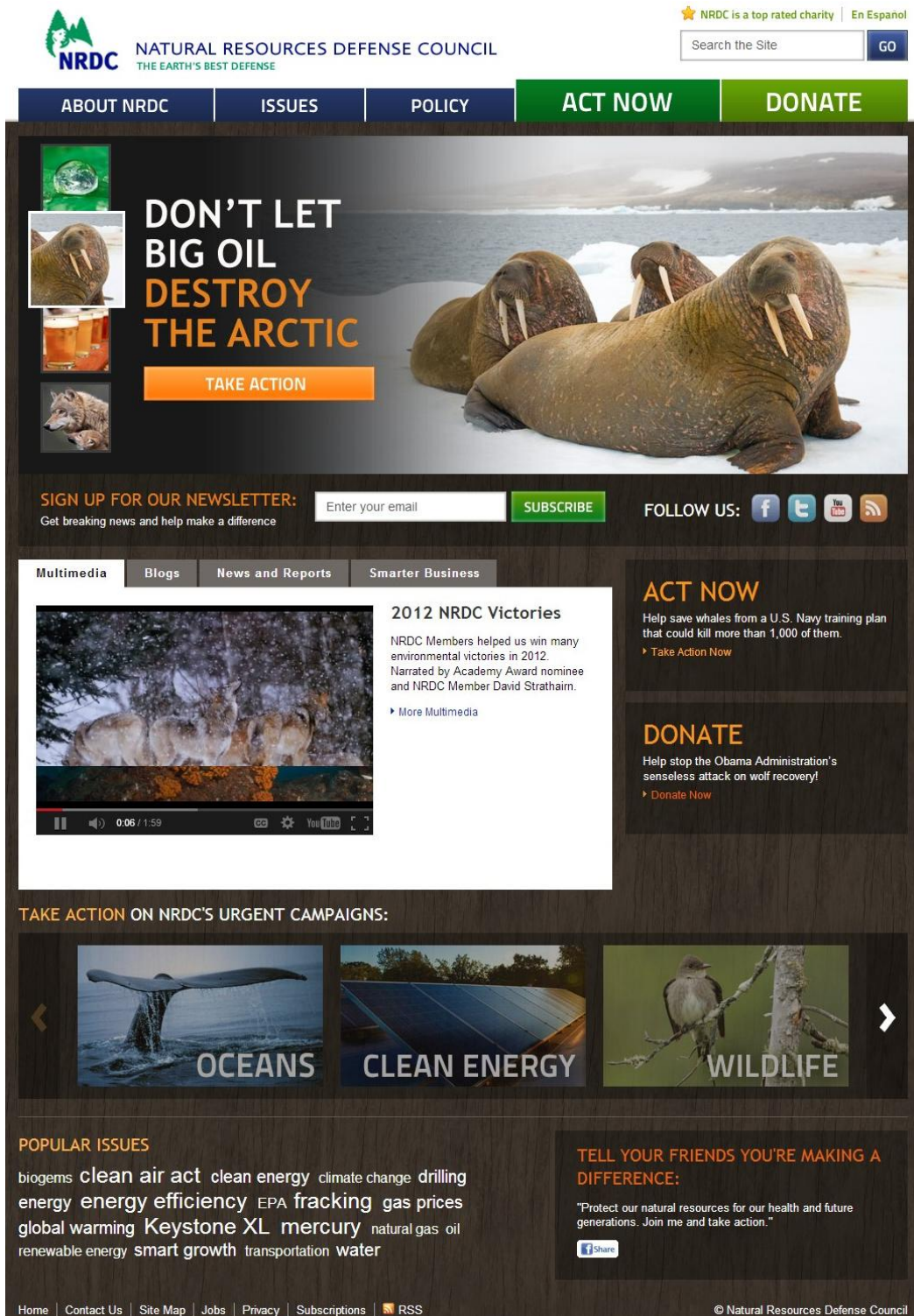


Figure 3-3: NRDC Website Home Page<sup>25</sup>

<sup>25</sup> Retrieved from <http://www.nrdc.org/> on 8 May, 2013.

In the initial stages of data review I performed a series of keyword searches (as similarly used in CDA research by Cohen 2010, Garoon and Duggan 2008, and Carvalho and Burgess 2005) as a way of locating scientific and ethical claims made by the lobby groups relating to ANWR. A significant organizational distinction between the two groups, however, which was reflected in their websites, dictated that I tailor my search in each case. Whereas Arctic Power is a single-issue lobby group, evidenced by its procurement of 'anwr.org' as the domain name of its official website, NRDC is a much more broadly defined action organization that claims a stake in numerous issues. My exploration of the latter group's website therefore involved the preliminary step of identifying and prioritizing materials that pertained specifically to the ANWR drilling debate. I did this by conducting a keyword search of the following terms: 'ANWR', 'arctic', 'oil', 'Alaska', 'drill', 'Refuge', 'caribou', 'Gwich'in', 'Iñupiat', 'federal land', 'North Slope', 'Coastal Plain', and 'Area 1002'. I then scanned the search results to assess the relevance of the found items.

An important observation I made during this process was that numerous pages on the NRDC website, while not focused solely or even primarily on ANWR itself, appeared in the results of multiple of my searches for ANWR-relevant terms. In other words, many of the themes central to the ANWR drilling debate are also central to the other issues of concern identified by NRDC. Such overlapping topics as the sensitivity of the arctic region to climate change, the dangerous dependence of the U.S. on fossil fuels to meet its energy needs, the role of federally managed lands in protecting biodiversity, and the environmental damage associated with domestic oil production, for example, permeate the NRDC website. In light of this, I identified several of the pages that came up in multiple search results, which therefore dealt with topics in common with and extremely relevant to ANWR, for inclusion in my analysis.

Further keyword searches I performed on the websites of both NRDC and Arctic Power pertained to the interrelated discursive themes I have since articulated as *materialism* and *morality*. They consisted of the following terms (including alternative prefixes and suffixes where applicable) : 'science', 'real', 'truth', 'actual', 'information', 'reason', 'rational', 'valid', 'evidence', 'correct', 'expert', 'accurate', 'legitimate', 'fact', 'data', 'proven', 'right', 'false', 'know', 'claim', 'myth', 'emotion', 'value', 'believe', 'bias', 'fiction', 'wrong', 'moral', 'ethical', 'deserve', 'entitled', 'should', 'must', 'just', 'objective', 'honest', 'fair', 'trust', 'impartial', 'good', 'bad'.

These keyword searches served as particularly useful tools in the process of mining the data and selecting appropriate content for inclusion in my analysis. In the case of NRDC's website, their effect was to expand my dataset by identifying additional pages of relevance to the ANWR drilling debate beyond those that mentioned the debate specifically. In the case of Arctic Power's website, the effect of the searches was to refine my dataset from the sum total of its pages, which all pertain to the ANWR debate in some sense, to just those of most relevance to my research. I gave greater consideration to pages that laid out substantive arguments in favor of development, for example, than to those endorsing a particular person's political candidacy<sup>26</sup>, or featuring celebrity political satire<sup>27</sup>. Ultimately though, I was interested in the spheres of contextualized meaning contained within the discourses of Arctic Power and NRDC, rather than particular words or expressions, which required my deconstructive and interpretive (Cryer 2006, Kincheloe and McLaren 2000) engagement with the results the searches produced.

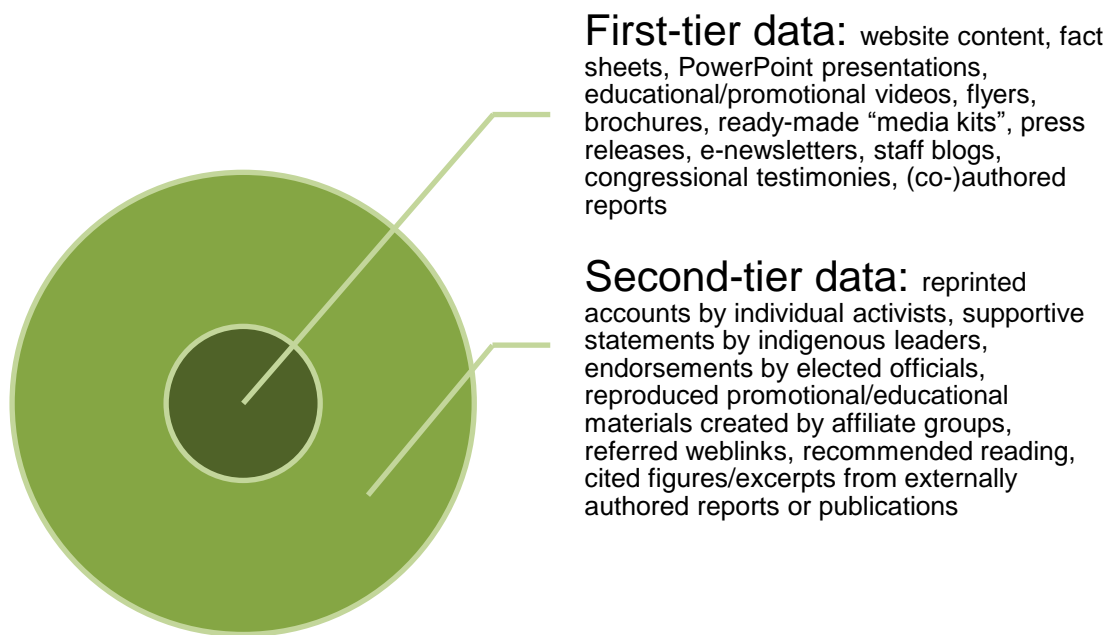
The pool of discursive materials I acquired from the Arctic Power and NRDC websites can be separated into two tiers of data (depicted in Figure 3-4). The first tier consists of the specific arguments, interpretations, descriptions, and assessments generated by the lobby groups themselves. It therefore refers to discourse in each organization's own words. I also note here that, though my inquiry was text-led, I considered associated photographs and figures as well, which in the case of first-tier data, were limited to those by each organization's own design. This tier includes embedded website content, fact sheets, prepared PowerPoint presentations, educational or promotional videos, flyers and brochures intended for printing and distribution, items from ready-made "media kits", press releases, e-newsletters, staff blogs, and a range of other social media. By distinction, commentary offered by organization supporters or other viewers of the websites, for example in open forums or community blogs that are externally generated and only minimally managed, was not included in my analysis.

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<sup>26</sup> Retrieved from <http://www.anwr.org/Politics/Begich-Comes-out-Fighting-for-ANWR.php> on 7 May, 2013.

<sup>27</sup> Retrieved from <http://www.anwr.org/Video/Jay-Leno-on-drilling-in-ANWR.php> on 7 May, 2103.





**Figure 3-4: Two tiers of discursive data**

Secondarily, the official websites of Arctic Power and NRDC functioned as launch pads, directing me to information originally produced by individuals or organizations outwith these two lobby groups, but which is referenced, or even reproduced, on one of the lobby group’s websites and thus integrated into that group’s own discourse. Examples within this second tier of data include personal accounts by individual activists, supportive statements by indigenous leaders, endorsements by elected officials, promotional or educational materials created by like-minded lobby groups, links to the websites of other organizations or agencies, and recommended reading lists. They also include citations of, as well as charts, figures, and excerpts from scientific studies published in peer-reviewed academic journals, or by policy analysts, pollsters, economic forecasters, or other research groups. Distinctively, this second tier of data describes information that has been commissioned, sourced, or otherwise selectively sought out by the lobby group for further public attention and dissemination.

Second-tier data consists of the evidence that Arctic Power and NRDC point to in order to bolster their respective ANWR claims. In this way, it refers to *their* data. It is also largely *their* data in the sense that nearly all of it has benefitted from funding or other support from either the oil industry or environmental protection groups. I am not interested in the information cited by the two lobby groups for its own sake,

however. Rather, my specific interest in second-tier data is to explore how it reinforces or complements first-tier data. In other words, I examine what either Arctic Power or NRDC says itself about the testimonials and studies it refers to, and just as importantly, what it doesn't say. I also consider how each group displays second-tier data, derives meaning from and makes associations with second-tier data, and ultimately integrates such data into its own communications.

Discretion and judgment were frequently required on my part in the selection and interpretation of data, as the available materials did not always fall neatly into one or the other of the above tiers. This was true, for example, in the case of the *OnEarth* quarterly magazine, which is published by NRDC and linked to the lobby group's website. NRDC's description of the magazine, however, includes the following disclaimer:

*[OnEarth] is open to diverse points of view; the opinions expressed by contributors and the editors are their own and not necessarily those of OnEarth's publisher, the Natural Resources Defense Council*<sup>28</sup>.

Thus, NRDC does not necessarily endorse the message of every article that appears in *OnEarth*. At the same time, however, the magazine is promoted and published by NRDC, and therefore broadly contributes to the discourses reproduced and circulated by the lobby group. On this basis, I chose to consider reoccurring themes across multiple issues of *OnEarth*, but not isolated entries, in my analysis.

In other instances, I was led through a series of non-linear mouse clicks (see 'nonlinearity' in Mitra and Cohen 1999) originating from resources on the Arctic Power and NRDC websites, to other items authored by these two groups but which are not directly linked to their own websites. I did include these materials in my analysis for the most part, for example when the Arctic Power website made reference to a piece of legislation related to ANWR, which directed me to the U.S. House of Representatives Natural Resources Committee, where I found transcripts of congressional testimony offered by a representative of Arctic Power. In all cases, an important criterion for inclusion in my analysis was that the text or imagery in question had been sufficiently approved for public viewing by designated decision-makers within the organization, so as to be representative of the group's collective interests and message.

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<sup>28</sup> Retrieved from <http://www.onearth.org/about> on 27 May, 2013.

A few general attributes of the data are worth noting. First of all, I mentioned earlier that the websites of both Arctic Power and NRDC are constantly being amended and updated, but this is not to say that they are up-to-date. In fact, a substantial amount of outdated information is exhibited on both sites, which is unavoidable to an extent, given that the ANWR debate itself is ongoing, as are the communications and inquiries associated with it. It may also be the intention of the groups to chart the history of the debate through its landmark moments, rather than to describe merely its current status. However, the websites of NRDC and Arctic Power manage the dynamic nature of the information they relay very differently from one another.

Many of the materials on the NRDC website that relate specifically to ANWR, including the general “Fact Sheets”, photo slide shows, and printable PDFs, date back to 2005 or even earlier, and much of the first-tier data that is directly embedded into NRDC’s webpages is not dated at all. I interpreted this to indicate the organization’s uninterrupted stance on the issue and support for the broad descriptions, assertions, and positions expressed. Much of the website’s second-tier data, on the other hand, is clearly dated, and the site’s search function includes a ‘sort by date’ option. In this way, claims based on gas prices or caribou herd populations or energy consumption rates from past years, as just a few examples, can be understood within their appropriate chronological context.

Though the NRDC website does not always reflect the current status of the ANWR debate, I did not become aware of any information contained within it that has been widely discredited since being published, or which has become inconsistent with the currently accepted scientific understanding of the issue. I cannot say the same, however, about Arctic Power’s website. In fact, the problem of outdated information is particularly problematic on the latter group’s website, for a few reasons. First of all, the overwhelming majority of first- as well as second-tier data on Arctic Power’s website is not dated at all. Similarly, the site does not provide an option to ‘search by date’. Moreover, there are multiple examples of long since outdated or even widely disputed information that remain prominently featured on Arctic Power’s website.

One example of the above involves a 1990 study by the WEFA Group which projected the number of jobs that would be created by allowing development in ANWR to be as high as 735,000 (WEFA Group 1990, p. 45). Multiple studies since,



however, four of which are discussed on NRDC's website, have refuted that projection. Even a 2011 report by the pro-development American Petroleum Institute (API), which incidentally commissioned the WEFA Group study, estimates the number of jobs created by the development of ANWR and the Rockies region together, to be just 160,000 (API 2011). This API report is hyperlinked to the 'Resources' page of the Arctic Power website, however the 735,000 figure, at times rounded up to 736,000<sup>29</sup> or even 750,000<sup>30</sup>, still appears on numerous other pages throughout the rest of the site<sup>31</sup>. More detailed discussion of this study by the WEFA Group is provided in chapter five, as is a second in-depth example of widely disputed data that remains central to Arctic Power's discourse (see 'Milne Point Road').

Another difference between the websites of Arctic Power and NRDC has to do with the amount and quality of reflexive information offered by each of the lobby groups. Both sites include 'Home' and 'About Us' pages, which outline the agenda and supportive structure of each organization. In addition, NRDC's website contains pages entitled 'Who We Are', 'Our Priorities', 'Mission Statement', 'NRDC Staff', and 'Board of Trustees', which provide greater detail about the individuals working for and with the group, and about the initiatives and issues it has taken on since its founding. The website of NRDC also declares the group's legal status as a not-for-profit organization, which operates under sections 501(c)(3) and 501(c)(4) of the federal tax code. In contrast, Arctic Power refers to itself as a "grassroots, non-profit citizen's organization" on its 'About Us' page, but does not specify its status as a business interest group operating under the 501(c)(6) tax code<sup>32</sup>.

In addition to the above, NRDC's annual reports are made available to view or download in PDF format from its website, in which the particulars of the organization's financial transactions are disclosed. A separate page on the group's site, entitled "Finances", also displays a pie chart that breaks down the organization's expenses for the most recent fiscal year, and further provides links to

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<sup>29</sup> Retrieved from <http://www.anwr.org/features/pdfs/employment-facts.pdf> on 19 September, 2013.

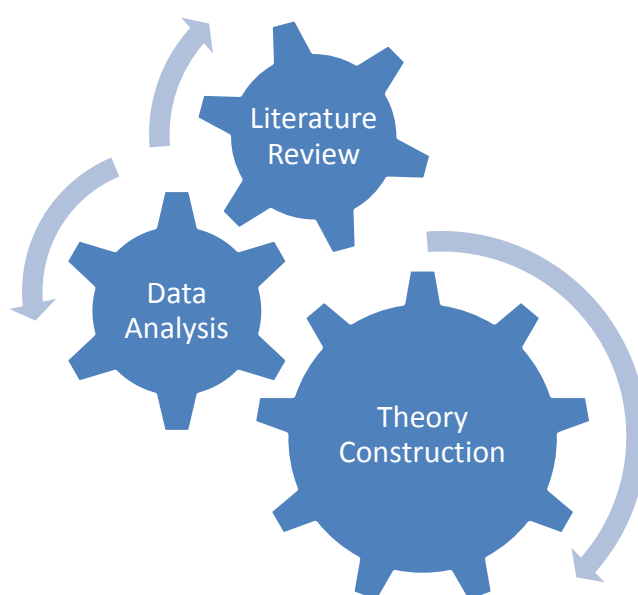
<sup>30</sup> Retrieved from <http://www.anwr.org/features/pdfs/faces-labor.pdf> on 19 September, 2013.

<sup>31</sup> Retrieved from <http://www.anwr.org/Background/Making-the-Case-for-ANWR.php>, <http://www.anwr.org/images/pdf/63008USAjobsmap.pdf>, and <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 19 September, 2013.

<sup>32</sup> Non-profit tax code information is publically accessible and must be disclosed by law if requested of an organization, but is not required to be displayed.

a copy of its most recent IRS 990 Form and audited financial statement. None of this information is made available on Arctic Power from its website, nor is information about the individuals who either work for or otherwise support the lobby group. As a result of this discrepancy in the levels of transparency between the two organizations, and also in supplement to the information that was made available by each of them directly, I occasionally sought supportive information about both organizations from such sources as the National Center for Charitable Statistics (NCCS 2013), The National Institute on Money in State Politics (Follow The Money 2013), and various other research groups and government agencies (The Bridgespan Group 2013, Internal Revenue Service 2013).

Finally, guided by the conceptual framework laid out in the earlier sections of this chapter, I carried out the tasks of sifting through, sorting, and selecting the data, as described here, concurrently and in close relationship with those of analysis, literature review, and theory construction. Each of these iterative steps involves a process that is interlaced with and interdependent upon the others. I have pictorialized this combined technique, developed from Lyn Richards' (2005) description of "data-theory bootstrapping," in Figure 3-5 below.



**Figure 3-5: Literature-Data-Theory Bootstrapping technique**

Literature-data-theory bootstrapping is not only effective but required in any discourse analysis, as it allows for the pool of data to be continually revisited and

reconsidered, and even extended or trimmed down, as patterns emerge and particular theories gain momentum or refinement. Likewise, such patterns and theories can be tested, developed, reinforced, or in other cases abandoned, through further and deeper exploration of the data.

In order to illustrate the process by which I analyzed the website data, and in particular by which I identified and refined the discursive themes ultimately presented in chapters five and six, I include a selection of text from each of the organizational websites below. These two text extracts are marked up with the annotations I used to initially code the data, and which later developed into more cohesive theories about the discourses produced by Arctic Power and NRDC. The first extract, entitled “Drill here. Drill now. Drill ANWR.” displays text cut from the Arctic Power website<sup>33</sup> and pasted here for easier readability.

**Drill here. Drill now. Drill ANWR.**

To pay less, save the environment, and stop sending trillions to foreign dictators.

“We can’t drill our way out of our energy problem.” This daily mantra underscores an abysmal grasp of economics by the **politicians, activists, bureaucrats and judges** who are dictating US policies. If only their hot air could be converted into usable energy.

**Drilling is no silver bullet. But it is vital.** It won’t generate overnight production. But just announcing that America is finally hunting oil again would send a powerful signal to energy markets ... and to **speculators** – many of whom are betting that continued US drilling restrictions will further exacerbate the global demand-supply imbalance, and send “futures” prices even higher.

Pro-drilling policies would likely bring lower prices, as did recent announcements that Brazil had found new offshore oil fields and Iraq would sign contracts to increase oil production. Conversely, news that supplies are tightening – because of sabotage in Nigeria’s delta region, or more congressional bans on leasing – will send prices upward.

One of our best prospects is Alaska’s Arctic National Wildlife Refuge, which geologists say contains **billions of barrels of recoverable oil**. If President Clinton hadn’t bowed to Wilderness Society demands and vetoed 1995 legislation, we’d be producing a million barrels a day from ANWR right now. That’s equal to US imports from Saudi Arabia, at \$50 billion annually.

Drilling in ANWR would get new oil flowing in 5-10 years, depending on how many lawsuits **environmentalists** file. That’s far **faster than benefits would flow from supposed alternatives**: devoting millions more acres of cropland to corn or cellulosic ethanol, converting our vehicle fleet to hybrid and flex-fuel cars, trying to build dozens of new nuclear power plants, and blanketing thousands of square miles with wind turbines and solar panels. These alternatives would take decades to implement, and all face political, legal, technological, economic and environmental hurdles.

ANWR is the size of South Carolina. Its **narrow** coastal plain is frozen and windswept most of the year. **Wildlife flourish amid drilling and production in other Arctic regions, and would do so near ANWR facilities.** **Inuits** who live there know this, and support drilling by an 8:1 margin. **Gwich’in Indians** who

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<sup>33</sup> Retrieved from <http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php> on 28 March, 2014.

oppose drilling live hundreds of miles away – and have leased and drilled nearly all their own tribal lands, including caribou migratory routes.

Drilling and production operations would impact only 2,000 acres – to produce 15 billion gallons of oil annually. Saying this tiny footprint would spoil the refuge is like saying a major airport along South Carolina's northern border would destroy the entire state's scenery and wildlife.

It's a far better bargain than producing 7 billion gallons of ethanol in 2007 from corn grown on an area the size of Indiana (23 million acres). It's far better than using wind to generate enough electricity to power New York City, which would require blanketing Connecticut (3 million acres) with turbines.

Anti-drilling factions also assert: "US energy prices are high, because Americans consume 25% of the world's oil, while possessing only 3% of its proven oil reserves."

Possession has nothing to do with prices – any more than owning a library, but never opening the books, improves intellectual abilities; or owning farmland that's never tilled feeds hungry people.

It is production that matters – and the United States has locked up vast energy resources. Not just an estimated 169 billion barrels of oil in the Outer Continental Shelf, Rockies, Great Lakes, Southwest and ANWR – but also natural gas, coal, uranium and hydroelectric resources.

"Proven reserves" are resources that drilling has confirmed exist and can be produced with current technology and prices. By imposing bans on leasing, and encouraging environmentalists to challenge seismic and drilling permits on existing leases, politicians ensure that we will never increase our proven reserves. In fact, reserves will decrease, as we deplete existing deposits and don't replace them. The rhetoric is clever – but disingenuous, fraudulent and harmful.

The Geological Survey and Congressional Research Service say it's 95% likely that there are 15.6 billion barrels of oil beneath ANWR. With today's prices and technology, 60% of that is recoverable. At \$135 a barrel, that represents \$1.3 trillion that we would not have to send to Iran, Russia, Saudi Arabia and Venezuela. It means lower prices and reduced risks of oil spills from tankers carrying foreign crude.

It represents another \$400 billion in state and federal royalties and corporate income taxes – plus billions in lease sale revenues, plus thousands of direct and indirect jobs, in addition to numerous jobs created when this \$1.7 trillion total is invested in the USA.

It means additional billions in income tax revenues that those jobs would generate, and new opportunities for minority, poor and blue collar families to improve their lives and living standards. It means lower prices for gasoline, heating, cooling, food and other products.

That's just ANWR. Factor in America's other locked-up energy, and we're talking tens of trillions of dollars that we either keep in the United States, by producing that energy ... or ship overseas.

This energy belongs to all Americans. It's not the private property of environmental pressure groups, or of politicians who cater to them in exchange for re-election support.

This energy is likewise the common heritage of mankind. Politicians and eco-activists have no right to keep it off limits – and tell the rest of the world: We have no intention of developing American energy. We don't care if you need oil, soaring food and energy prices are pummeling your poor, or drilling in your countries harms your habitats to produce oil for US consumers.

Those attitudes are immoral and intolerable. It shows disdain for the world's poor. And it's bad for the global environment.

It's time to drill again here in America – onshore and off, in Alaska and the Lower 48 – while conserving more and pursuing new energy technologies for the future.

The second extract, entitled “Arctic Wildlife Refuge: Why Trash an American Treasure for a Tiny Percentage of Our Oil Needs?”, similarly displays text cut from the NRDC website<sup>34</sup>.

#### Arctic Wildlife Refuge: Why Trash an American Treasure for a Tiny Percentage of Our Oil Needs?

Drilling for oil in America's premier wildlife sanctuary would deface the pristine landscape and threaten Alaskan wildlife.

On the northern edge of our continent, stretching from the peaks of the Brooks Range across a vast expanse of tundra to the Beaufort Sea, lies Alaska's Arctic National Wildlife Refuge. An American Serengeti, the Arctic Refuge continues to pulse with million-year-old ecological rhythms. It is the greatest living reminder that conserving nature in its wild state is a core American value.

In affirmation of that value, Congress and the American people have consistently made clear their desire to protect this treasure and rejected claims that drilling for oil in the Arctic Refuge is any sort of answer to the nation's dependence on foreign oil. Twice in 2005, Congress acted explicitly to defend the refuge from the Bush administration and pro-drilling forces, with House leaders removing provisions that would have allowed for drilling from a massive budget bill, and the Senate withstanding an attempt by Republican leaders to open up the Arctic.

Since then, concerned Americans have continued to push Congress to thwart recurring efforts to see the refuge spoiled. During President Obama's 2008 campaign he pledged not to open the coastal plain of the Arctic National Wildlife Refuge to oil and gas leasing. Over the last year the Fish and Wildlife Service has been developing a new management plan for the Refuge and is considering recommending Wilderness for the coastal plain.

#### Americans Have Steadily Opposed Drilling the Arctic National Wildlife Refuge

The controversy over drilling in the Arctic Refuge -- the last piece of America's Arctic coastline not already open to oil exploration -- isn't new. Big Oil has long sought access to the refuge's coastal plain, a fragile swath of tundra that teems with staggering numbers of birds and animals. During the Bush administration's first term, repeated attempts were made to open the refuge. But time after time, the American public rejected the idea.

Congress has received hundreds of thousands of emails, faxes and phone calls from citizens opposed to drilling in the Arctic Refuge, an outpouring that has helped make the difference. And polls have consistently shown that a majority of Americans oppose drilling, even in the face of high gas prices and misleading claims from oil interests. A June 2008 poll by the research firm Belden Russonello & Stewart found that 55 percent of the American public supports continued protection for the Arctic Refuge, and only 35 percent of Americans believe that allowing oil companies to drill in the refuge would result in lower gas prices for American consumers.

Despite repeated failure and stiff opposition, drilling proponents press on. Why? They believe that opening the Arctic Refuge will turn the corner in the broader national debate over whether or not energy, timber, mining and other industries should be allowed into pristine wild areas across the country. Along with the Arctic, oil interests are now targeting America's protected coastal waters. Next up: Greater Yellowstone? Our Western canyonlands?

The drive to drill in the Arctic Refuge is about oil company profits and lifting barriers to future exploration in protected lands, pure and simple. It has nothing to do with energy independence. Opening the Arctic Refuge to energy development is about transferring our public estate into corporate hands so that it can be liquidated for a quick buck.

Arctic Refuge Oil Is a Distraction, Not a Solution

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<sup>34</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 28 March, 2014.

What would America gain by allowing heavy industry into the refuge? Very little. Oil from the refuge would hardly make a dent in our dependence on foreign imports -- leaving our economy and way of life just as exposed to wild swings in worldwide oil prices and supply as it is today. The truth is, we simply can't drill our way to energy independence.

It would take 10 years for any Arctic Refuge oil to reach the market, and even when production peaks -- in the distant year of 2027 -- the refuge would produce a paltry 3 percent of Americans' daily consumption. The U.S. government's own Energy Information Agency recently reported that drilling in the Arctic would save less than 4 cents per gallon in 20 years. Whatever oil the refuge might produce is simply irrelevant to the larger issue of meeting America's future energy needs.

Handing On to Future Generations a Wild, Pristine Arctic? Priceless.

Oil produced from the Arctic Refuge would come at an enormous, and irreversible, cost. The refuge is among the world's last true wildernesses, and it is one of the largest sanctuaries for Arctic animals. Traversed by a dozen rivers and framed by jagged peaks, this spectacular wilderness is a vital birthing ground for polar bears, grizzlies, Arctic wolves, caribou and the endangered shaggy musk ox, a mammoth-like survivor of the last Ice Age.

For a sense of what Big Oil's heavy machinery would do to the refuge, just look 60 miles west to Prudhoe Bay -- a gargantuan oil complex that has turned 1,000 square miles of fragile tundra into a sprawling industrial zone containing 1,500 miles of roads and pipelines, 1,400 producing wells and three jetports. The result is a landscape defaced by mountains of sewage sludge, scrap metal, garbage and more than 60 contaminated waste sites that contain -- and often leak -- acids, lead, pesticides, solvents and diesel fuel.

While proponents of drilling insist that the Arctic Refuge could be developed by disturbing as little as 2,000 acres within the 1.5-million-acre coastal plain, an NRDC analysis reveals this to be pure myth. Why? Because U.S. Geological Survey studies have found that oil in the refuge isn't concentrated in a single, large reservoir. Rather, it's spread across the coastal plain in more than 30 small deposits, which would require vast networks of roads and pipelines that would fragment the habitat, disturbing and displacing wildlife. (See a mapped scenario in pdf.)

A Responsible Path to Energy Security

The solution to America's energy problems will be found in American ingenuity, not more oil. Only by reducing our reliance on oil -- foreign and domestic -- and investing in cleaner, renewable forms of power will our country achieve true energy security.

The good news is that we already have many of the tools we need to accomplish this. For example, Detroit has the technology right now to produce high-performance hybrid cars, trucks and SUVs. If America made the transition to these more efficient vehicles, far more oil would be saved than the Arctic Refuge is likely to produce. Doesn't that make far more sense than selling out our natural heritage and exploiting one of our true wilderness gems?

The yellow highlighting above indicates references to oil or reliance on fossil fuels, the pink highlighting points to representations of the natural arctic landscape, and the blue highlighting features individual stakeholder groups or actors in the drilling debate, as identified by each of the lobby groups. Additional annotations indicate particular points of comparison or contrast between the respective discourses of Arctic Power and NRDC, for example pertaining to how each group characterizes claims made by its opposition (encircled in purple) and how each group describes the quantity of petroleum reserves beneath the Coastal Plain (encircled in orange), as well as how each group employs the notion of a common 'heritage' to convey the value of ANWR (encircled in green).

These annotations reflect some of my preliminary observations about the content and features of the website data. As such, they correspond to an early stage of my engagement with the literature-data-theory bootstrapping process described above, rather than indicate adherence to a more regimented, linear or formalized coding system.

Once I had annotated the text, I drew insights from relevant literature on how to critically assess, synthesize and develop my initial observations into overarching themes. Discourse analytic theories about ingroup-outgroup polarization (van Dijk 2006b, Wodak 1997) and feminist theories of 'other'ing (Valentine 2002), for example, encouraged me to explore the socio-culturally specific vantage point of the narratives I was reading, and to consider their target audiences, as well as to attend to the explicit and implicit representations of third party groups. All of this required that I return to the annotated text many times, but also that I continually reconsider and update the annotations themselves. (The discussion that ensued from this exploration of vantage points is presented in sections 6.1.1, 6.1.2 and 6.2.1.)

Similarly, theories about the ambiguity, in addition to structure, of language (Burke 2006), and particularly those concerning the use of metaphor in persuasive communication (Ferrari 2007), led me to question the rhetorical implications of, for instance, likening ANWR to the Serengeti (highlighted in pink above), or equating its preservation with "owning a library, but never opening the books" (see analysis in sections 5.1.4 and 5.2.1).

In many cases, review of associated literature and subsequent re-examination of the data led me to amend or significantly alter the theories I had been working with up to that point. Very early on in my research process, for example, I had identified materialism and morality as separate, dominant themes within the discourses of Arctic Power and NRDC. However, through engaging with several social studies of science, which sit at the intersection of facts and values, and further analyzing the data, I came to understand the relationship between materialism and morality as a single theme, and one that is similarly endorsed by both lobby groups.

In another example, my early consideration of the stakeholders identified by each lobby group (highlighted in blue) suggested a public-private divide, in which NRDC more closely aligned itself with public sector interests, and Arctic Power with private. This theory was supported by the lobby groups' contrasting positions on

government-imposed regulation of corporate development activities in ANWR, as well as their respective tax-exempt declarations (explained in section 3.3.1). Upon further inspection, however, that theory broke down. I observed, for example, that both lobby groups are fiercely critical of government intervention as well as inaction, though often in difference instances. (The first text extract above blasts President Clinton, while the second blasts President Bush.) Both groups also praise industry innovations, be they in the form of “high-performance hybrid cars” or the “tiny footprint” of today’s oil production operations, as paving the way toward energy security.

Importantly, a range of critical studies, among them several critical discourse analyses, informed the process by which I drew out significant parallels between the discourses of Arctic Power and NRDC. Such scholarship unpacks neoliberal, nationalistic, and other dominant ideologies, and thus helped me to identify the shared use of hegemonic language by these two lobby groups, which re-constitutes citizens as consumers (within blue highlighted text) and proprietorship as an entitlement (encircled in green), and also renders the future as a return on the monetary investments we make today (within blue and yellow highlighted text).

These points are all central to the discussion of ‘costs’ and ‘benefits’ I provide in chapter five, and follow up in chapter six as well. I mention them briefly here specifically to demonstrate the iterative nature of the process through which I have analyzed my data, and to recount my journey back and forth, many times, between the raw text and the academic literature, all the while reviewing and revising the theories I finally articulate in the presentation of my discourse analysis.

Though I revisited both websites regularly throughout my research process, there were inevitably data contained within them that did not undergo my analysis. That said, my methods were meticulous and thorough, and enduring to the point at which I found that new information consistently reinforced the results of my analysis and supported the theories I had constructed, rather than guided them in new directions. In other words, I utilized the literature-data-theory bootstrapping technique continuously throughout my research process, pivoting between each of its three gears, until I had reached the point at which data and theory had aligned, or as it is commonly referred to in qualitative social scientific research, the point of saturation (Leech 2005, see also “internal generalizability” in Maxwell 1992).



## CHAPTER 4:

# THE HEGEMONIC FRAME: *MATERIALISM AS MORALITY*

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As indicated in the introductory chapter of this thesis, a central premise of the present study is that the discourses of both Arctic Power and NRDC reinforce a hegemonic framing of the ANWR drilling debate, which upholds *Materialism as Morality*. In this chapter, I take a step back to break down the meaning and socio-historical significance of this premise.

I begin with a deconstruction of the term materialism, including its key usages within academic literature and its relevance to our contemporary understanding of the relationship between the physical and social worlds. I then offer some initial observations about the materialist discourses of Arctic Power and NRDC, which each conflate scientific data pertaining to the physical world with explicitly normative socio-political positions regarding the ANWR conflict. Most importantly, I argue that the scientized discursive frame shared by these two lobby groups is hegemonic in the sense that it both disguises and perpetuates social inequality.

Though distinct from the findings of my critical discourse analysis, my preliminary assessment of the political campaigns of Arctic Power and NRDC, as described over the following paragraphs, was instrumental itself in the process of targeting specific areas within their discourses for more in-depth and critical analysis, the findings of which are subsequently presented in chapters five and six.

### **4.1 A BRIEF ETYMOLOGY**

The materialist frame I have identified as a defining attribute of the national ANWR drilling debate retains elements of three distinct and well established materialist philosophies within existing academic literature. As neatly summarized by Roy Bhaskar (cited in Foster 2000, p. 2), these include ontological, epistemological, and practical materialism, each of which, along with its relevance in the context of ANWR, I describe below.

First of all, at the root of the word materialism is *matter* – in other words, that which is tangible and observable, and which occupies space. In an ontological sense, materialism describes a conception of the world in which matter precedes thought. It asserts that everything we know about the world is merely a reflection of, and

therefore secondary to, that which has a primarily physical existence (Strawson 2008). Ontological materialism is thus consistent with realism, as even its most flexible treatments maintain that absolutely everything has a material explanation, if not also a material expression.

Accordingly, ontological materialism contends that the universe and all that it contains, including societies, ideas, and relationships, as well as sensuality, spirituality, and even morality, can be reduced to matter. The phrase *Materialism as Morality*, which I use to describe the hegemonic framing of the ANWR drilling debate, refers precisely to this point, as its associated ethical and socio-political questions have been largely reduced to concrete, substantive ones.

Secondly, the *Materialism as Morality* frame draws on epistemological materialism. Central to this theory of knowledge is an emphasis on the world itself rather than on the ways it is interpreted or understood, and similarly on the import of physical attributes over all others. This form of materialism neatly aligns itself with objectivism rather than subjectivism or constructionism, and also with a set of positivist practices through which the theoretical perspective can be operationalized. Such methodologies and methods, which have primarily been developed within the physical sciences, principally involve deductive inquiry, observation, measurement, modeling, and experimentation. These investigative approaches also lend themselves to reliability, verifiability, prediction, and control. The dominant framing of the ANWR debate resembles epistemological materialism in the way it offers a reflection of empirical findings that have been extrapolated from the particular to the general.

In his discussion of epistemological materialism, Vladimir Lenin (1970) described that, “matter is primary, and thought, consciousness, sensation are products of a very high development. Such is the materialist theory of knowledge, to which natural science instinctively subscribes” (p. 54). Many others have similarly noted that the physical sciences are inherently “materialistically inclined” (Robinson 1982, p. 1), and hence that the materialist ideal is itself materialized through the epistemology, activities, and institution of science.

That said, the modern scientific method, originally outlined by Francis Bacon (Gaukroger 2001) and then adapted by Popper and others (Nola and Sankey 2007), and the positivist perspective from which it stems, are not exclusively the domain of

the natural sciences. They extend to varying degrees into such fields as political science and economics (Redman 1993), jurisprudence (Sebok 1998), linguistics (Sacks 1989), psychology and sociology (Martineau 2000). The general epistemological privileging of object over subject, physicality over experience, and verification over valuation, is reinforced through materialist messages and modes across a range of topics, fields, and disciplines.

Within the social sciences, materialism is most closely associated with Karl Marx, who engaged primarily with the third philosophy of materialism, referred to as practical materialism. Specifically, Marx invoked the term materialism to emphasize the critically important role of the production of material goods in shaping social and political relations (Arthur 2003, Marx 1867). He, along with his contemporary, Friedrich Engels, introduced a 'materialist conception of history' in which to explore how societies move through various socio-political orders, or 'modes of production', over time (see "historical materialism" in Fromm 2004, Engels 1886). Along these lines, Marx was troubled by the material implications of a capitalist political economy, for example around the division of labor and associated social stratification. He was similarly concerned with the progressive accumulation of wealth by the capitalist class, as a result of the continual extraction of profit by the owners of capital from the efforts of the laboring class.

In his study of material relations, Marx drew heavily on Hegel's use of the 'dialectic' to synthesize oppositional ideas through close examination of their interconnectivity and mutual construction (Arthur 2003). Hegel, for example, described the notion of 'becoming' as the logical synthesis, or dialectic, of the antipodal concepts 'being' and 'nothing' (Speight 2008). In contrast to Hegel, however, who worked within the tradition of German idealism and dealt primarily in the abstract, Marx adapted the use of dialectics for his investigations of the physical and socio-political realms, for instance to probe the relationship between the proletariat and the bourgeoisie (Thomas 2009, p. 249). Marx's interest in materiality was thus driven by very practical, distributional, and emancipatory objectives.

Many of Marx's contemporaries and successors have expanded on or revised his materialist concepts and aims. Lenin, Althusser, and Timpanaro, to name just a few, also saw materialism as necessarily political, and even as a potential revolutionary weapon (Althusser 1972). Several of these Marxist-materialist scholars, however, additionally adhered to a more rigid ontological materialism,

characterized by an “acknowledgement of the priority of nature over ‘mind’” (Timpanaro 1975, p. 34), than did their predecessor (Mann 2009).

Let me pause here to situate my use of the phrase *Materialism as Morality* in relation to Marx, which I will do first of all by addressing an important distinction between the two. Throughout this thesis, I echo the view of many other critical scholars that materialism, in the way it permeates the activities and doctrine of the modern scientific establishment, is afforded a kind of “handmaid status” relative to the dominant capitalist regime (York and Clark 2010, p. 479). I also mention, above, that materialism has been employed by Marx and others in the critique of capitalism and unveiling of its resulting social inequalities. An appreciation of the differences as well as similarities between these two usages of the term materialism is essential to understanding the underlying premise of this thesis.

A central tenet of Marx’s philosophy was that societies are essentially defined by the material goods on which they depend, and by the political and economic systems in which those goods are produced, exchanged, and consumed. Much of his work drew important connections between the “mode of production” in a particular society, and the ensuing social relations of production (Marx 1867). He also advocated for a “materialist method” of study (Fromm 2004, p. 9), more commonly referred to as a ‘materialist conception of history’, which draws attention to how social and class relations change over time as a society is pressured, notably by its subaltern classes, to move from one mode of production into the next. Marx thus focused on the material world as a way to historically situate and describe the dynamics of the social world; a focus that has been key within critical theory and various other strands of Marxist scholarship ever since.

In contrast, the material focus of the ANWR debate, as shared by the modern scientific establishment, rejects contextualization. This more doctrinaire and institutionalized materialism strives instead for objectivity, timelessness, and universality. Whereas Marx drew on materialism as a practical tool with which to understand, for example, inequity, oppression, and revolution, the hegemonic materialism explored here refers to a more fundamental ontological and epistemological commitment. The latter adopts a pretense of neutrality. It is discursively distanced from any particular motivation, agenda, or code of ethics, and instead derives legitimacy and authority from its superior access to ‘Truth’. It is a vehicle of power as opposed to a mechanism for resistance to power.

The persuasive and political potential of materialism in this hegemonic sense lies in the hands of those with access to the scientific establishment and the resources to utilize scientific knowledge. In a capitalist system, that access and those resources belong to the owners of capital. Indeed, this point has been extensively corroborated by Marx himself (Fromm 2004), as by numerous other critical and Marxist scholars. Notably, Frankfurt school theorists applied Marx's concept of dialectical materialism in direct challenge to the material-social dichotomy presupposed by institutionally-sanctioned positivist science (Bottomore 2002, Horkheimer 1972).

Much further discussion could be devoted to the specific links between scientific materialism and capitalism, for example regarding the roles of profit imperatives and free enterprise principles in scientific knowledge production (Ravetz 1971), or the extension of private property rights into the domains of data sharing and even human intellect (Suarez-Villa 2009). However, the point here is that materialism, in its descriptive and uncritical form, reflects as well as reinforces dominant power structures and institutional practices, taken together as the status quo. In Gramscian terms, it ensures continuity in the 'historic bloc' (Jessop 2004, p. 15) by "bringing about not only a union of [elite] economic and political aims, but also intellectual moral unity" (Gramsci 1971, cited in Ekers et al. 2009, p. 289). Thus, the *Materialism as Morality* frame is hegemonic precisely because it renders the world through the lenses, and in line with the interests, of the most privileged and powerful, who are themselves instrumental in the rendering.

Though Marx's materialism can be clearly distinguished from the hegemonic materialism at issue here, there are important commonalities between the two as well. It is deliberate, rather than coincidental, that I have chosen a phrase to describe the dominant framing of contemporary socio-environmental issues that is allusive of the legacy of Karl Marx. Other scholars have similarly highlighted materialism's double entendre in the context of political- and socio-ecology (Foster 2000, York and Clark 2010, Williams 1999), to draw on the widely relevant work of Marx whilst also developing, continually critiquing, and progressing the Marxist tradition.

Marx was critical of the ways in which scientific actors and institutions could manipulate knowledge to political ends. At the same time, he largely accepted the underlying realist ontology to which they subscribed (Foster 2000, Kitching 2010).

Though he disapproved of the specific implementation of many technical innovations, Marx consistently endorsed science as a superior form of knowledge (York and Clark 2010). He therefore drew an important distinction, which was perhaps uncharacteristic of a philosopher so committed to the dialectic, between the promise of science and the flawed practice of it. Marx described, for example, that “the contemporary use of machines [...] is one of the relations of our present economic system, but the way in which machinery is utilized is totally distinct from the machinery itself. Powder is powder whether used to wound a man or to dress his wounds” (Marx and Engels 1975, cited in York and Clark 2010, p. 479).

From the perspective adopted here, in contrast, the difference between ‘powder used to wound a man’ and ‘powder used to dress his wounds’ is paramount; any physical properties shared between the two are largely beside the point. As Brian Wynne explains, reiterating the view of Ulrich Beck and others, “environmental problems are inseparably intertwined with institutional problems of order and coherence” (2002, p. 466). Accordingly, the present research is critical of reductionist attempts, including that of Marx, to see the natural world ‘in itself’, and to imagine a kind of cohesive purity, or at least the potential for it, in scientific knowledge.

A second and equally important feature common to the materialisms of both Marx and the current hegemonic order identified here pertains to their explicitly practical motivations. In contrast to the Hegelian idealism referred to above, Marx (1975) described that “the relations of man to nature [are] practical from the outset, that is, relations established by action” (cited in Foster 2000, p. 2). Similarly, the dominant environmental discourses of today are primarily concerned with linking knowledge to action. In fact, calls to action<sup>35</sup> frequently serve as the very impetus for knowledge generation (see ‘technical decision-making’ in Collins & Evans 2002, cited in Wynne 2003, and ‘goal-oriented science’ in Nelkin 1982). Absent from dominant

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<sup>35</sup> Examples abound, including “to expand an airport; to ban a drug; to site a power plant” (Nelkin, p. 279); as well as to address such questions as “should you eat British beef, prefer nuclear power to coal-fired power stations, want a quarry in your village, accept the safety of anti-misting kerosene as an aircraft fuel, vote for politicians who believe in human cloning, support the Kyoto agreement, and so forth” (Collins & Evans 2002, cited in Wynne 2003, pp. 409-410).

discourses, however, is what Brian Wynne refers to as “the essential human-cultural political dimension” (2002, p. 460).

This essential dimension involves recognition of different identity constructions, cultural priorities, and environmental perspectives, in addition to the redistribution of natural resources and risks. Though it has been “radically subverted and marginalized by the dominant scientific-institutional risk culture” (Wynne 2002, p. 460), the human-cultural political dimension has risen to prominence within certain anti-realist strands of post-Marxist philosophy, such as poststructuralism and postmodernism (Wood 1995). It is also featured in the “new social movements” (Della Porta and Diani 2009) that emerged during the 1960s and 1970s, for example around women’s liberation and environmental protection. While these movements do not dispute the Marxist, structuralist claims that a dramatic redistribution of material resources is vital to achieving social justice, they argue that justice extends beyond materiality, and also that material and non-material concerns are inextricably linked to one another.

The “Hegelian turn in Marxism” (York and Clark 2010, p. 477) carved out an important niche for poststructuralist, postmodern, and other post-material programs within academic and activist circles. Modernity, however, and its accompanying scientific world-view still reign in the realm of environmental politics. As such, the thrust of my critique of the hegemonic materialist framing of contemporary socio-environmental issues closely resembles the thrust of various post-material critiques of Marx. Essentially, a conception of the environment as “simply the material substrate of the social, defined by scientific inquiry” (Szerszynski et al. 1996, p. 1-2) is insufficient. Scientific knowledge is crucial to our understanding of environmental processes, problems, and future possibilities, but parallel commitments to ideological and ethical considerations; to self-determinism and self-expression; to political participation as well as political representation; and to the decentralization as well as redistribution of power, are additionally required.

The hegemonic framing of socio-environmental issues highlighted in this thesis has been similarly critiqued elsewhere, and through a range of articulations, for example on the basis of its “evidence-based” (Green 2013), “monovalent” (Wynne 2002), “instrumentalist” (York and Clark 2010), “scientized” (Habermas 1970), “unreflexive”, “disembedded”, or “empirico-rationalist” predispositions (Lash et al. 1996, Szerszynski et al. 1996, Lash and Friedman 1992). While I refer to many of these

articulations throughout this thesis, I describe the hegemonic framing of the ANWR drilling debate specifically through use of the phrase *Materialism as Morality*, with the intention of engaging all of the associations laid out above.

#### **4.2 MATERIALISM AND ANWR**

In depicting the ANWR region and discussing the prospect of oil development within its borders, both Arctic Power and NRDC are diligently mindful of the physical realities of the situation, and much less so of the vast number and diversity of people invested in its outcome. I expound in greater detail on the lobby groups' respective depictions and persuasive strategies in the discourse analysis presented in chapters five and six, but here I point to the principal arguments made by each organization to briefly illustrate the materialist rendering of the drilling debate to which both groups contribute.

Arctic Power has reduced nearly every aspect of its pro-drilling campaign to a number, figure, or fact. More significantly, the oil lobby group is disparaging of any reference to emotional investment, positionality, ideology, or 'feeling'<sup>36</sup>, which it equates with irrationality, bias, and distortion. The group instead approaches the proposition of development in ANWR through an essentially quantitative cost-benefit analysis.

Arctic Power claims that the amount of oil to be recovered from the Coastal Plain is vast, as would be all of the various subsequent payouts of development as well, including the number of jobs created, car tanks filled, and revenue dollars generated. At the same time, the oil lobby group projects that any associated environmental impacts would be insignificant, and so concludes that the potential rewards of drilling are far greater than any perceived losses. Arctic Power's core claims are neatly outlined on its website in a list of "top ten reasons to support

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<sup>36</sup> Examples are found throughout Arctic Power's website, including on <http://www.anwr.org/features/pdfs/realanwr-page1.pdf>, <http://anwr.org/features/issues/wildlife-protect.htm>, <http://www.anwr.org/features/players/gwichin.htm>, <http://www.anwr.org/People/Iñupiat-Eskimos.php>, <http://www.anwr.org/Latest-News/Senator-Kay-Bailey-Hutchison-on-ANWR-Ethanol.php>, <http://www.anwr.org/Headlines/There-is-a-Job-that-Needs-to-be-Done-That-we-Expect-to-be-Done.php>, <http://www.anwr.org/People/Former-Alaska-State-Senator-Al-Adams-Favors-Oil-Development.php>, retrieved 14 May, 2013.



ANWR development<sup>37</sup>". Reasons one through nine<sup>38</sup> explicitly echo the materialist messages of either 'minimum impact' or 'maximum return', if not both. Number ten, however, stands alone as the only item in which Arctic Power alludes to the fact that the ANWR drilling debate is in fact being debated, although this is hardly the point being made. Reason number ten declares that "Over 78% of Alaskans favor exploration and production on the Coastal Plain of ANWR. [...] ANWR development is not a partisan issue in Alaska, it is strongly supported by all".

There are several potential points of contention in the above statement, not the least of which is that "78% of Alaskans" does not constitute "all" of Alaskans. In fact, it represents 22% less than the all. Additionally, Arctic Power's assertion disguises the fact that many people residing outside of the state of Alaska are similarly involved and invested in the drilling debate. The Refuge itself is federal land, after all, and shares a border with Canada. It is also indisputably the case that oil production in the modern era is an environmentally, economically, and politically global maneuver. These are just a few of the complexities of the drilling debate obscured through Arctic Power's fact-focused representation of the issue, which upholds *Materialism as Morality*. Essentially, the oil lobby group's framing of the issue allows details in the available data to eclipse the people, values, and processes represented in, and affected by, them.

NRDC similarly glosses over the contested and multiscalar nature of the ANWR issue, claiming for example that "Americans Have Steadily Opposed Drilling the Arctic National Wildlife Refuge<sup>39</sup>". The environmental lobby group also emphasizes that the Porcupine Caribou herd, which migrates to the Coastal Plain of ANWR every spring to calve its young, is sacred to and a primary means of subsistence for the region's Native Gwich'in tribe. NRDC does not point out, however, that another Native group, the Iñupiat, who are also heavily dependent on the caribou, have spoken out in favor of drilling. Instead, the anti-drilling organization, like its

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<sup>37</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 14 May, 2013.

<sup>38</sup> These are headlined as follows: 1) Only 8% of ANWR would be considered for exploration, 2) Revenues to the State and Federal Treasury, 3) Jobs to be Created, 4) Economic Impact, 5) America's Best Chance for a Major Discovery, 6) North Slope Production in Decline, 7) Imported Oil Too Costly, 8) No Negative Impact to Animals, and 9) Arctic Technology = Advanced Technology.

<sup>39</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 14 May, 2013.

opponent, delves much more deeply into certain material facts and characteristics of the region's resources.

NRDC argues that the infrastructure and operations involved in drilling would severely impact the natural setting of the Refuge, disrupt the physical processes of surrounding ecosystems, and cause irreversible harm to the wildlife of the region. Moreover, the environmental lobby group asserts that these devastating consequences would all be for naught, as the potential gains of oil development, including things like job creation, lowered gas prices, and reduced dependence on foreign petroleum imports, would be negligible. In short, according to NRDC, the heavy costs of development easily outweigh any benefits.

The above positions and rationales illustrate the reductive and scientized (Habermas 2010) terms of the drilling debate overall, as established by Arctic Power and NRDC and reinforced by one another's retorts. Their shared materialist frame clearly has advantages, the most obvious being that it underscores several important material concerns raised in connection with proposed drilling in the Arctic, and draws on generations of valuable scientific knowledge and empirical investigation in order to address them. However, this hegemonic frame carries certain troubling implications as well, particularly for stakeholders who have been historically underrepresented in and by the material sciences, and whose investments in the drilling debate are inadequately acknowledged by either environmentalists or the oil industry, which I move on now to discuss.

#### **4.3 KEY IMPLICATIONS**

The negative implications of materialist discourses, as identified through a range of social studies of science outside the context of ANWR, fall into a handful of related and overlapping categories. All of them have to do with the fact that, however social processes might be philosophically upstaged or even consumed by a physical reality, society and nature share an equal and thoroughly enmeshed partnership in the actual workings of everyday life (Castree and Braun 2001). Laws of physics, chemistry, and biology are described by groups of scientists who implement the training and techniques developed within their socially structured institutions (Kuhn 2012, Yearley 2005, Barnes and Edge 1982). Natural phenomena are observed, trends are identified, molecules and cells and species are classified, forces are measured, and facts are established, not by matter itself, but by people interacting

with it (Barnes et al. 1996, Kuhn 1982). To focus exclusively on one of these two partners is to see just half of the picture.

#### **4.3.1 Partiality**

A significant and problematic effect of any materialist framing is that it provides a necessarily partial view, and in several senses. Firstly, materialist discourses are partial in accordance with the reductionist scientific practices on which they rely. Science involves systematic processes of dissection, itemization, and meticulous examination. It breaks objects apart in order to study the intricacies of their components and to analyze in detail the properties and functions of their most elemental parts. As Burke (1969) noted, however, “the whole transcends the partiality of its parts” (p. 89). In other words, constituent parts of a whole change in relationship and interaction with one another. They “acquire properties by being together, [and] impart to the whole new properties” (Levins and Lewontin 1985, p. 3; see also York and Clark 2010, p. 479). Scientific reductionism can therefore be a useful explanatory tool by enabling a sharp and narrow focus, but it can also distort or detract from the bigger picture, and thus hinder the seeing of the forest for the trees.

Secondly, materialism is partial in the sense that it is purposeful and selective. Scientific research chips away at the unknowns of the world, not uniformly or even randomly, but through the setting of specific goals, the prioritization of tasks, and the strategic allocation of available resources (Barnes et al. 1996, Barnes and Edge 1982). In the case of ANWR, the overwhelming majority of research considered relevant in the drilling debate, including studies conducted by universities and various government agencies, was politically motivated, and much of it was commissioned and funded by its stakeholders themselves (see chapters five and six for several specific examples). The contributing scientists, many of whom were employed by either the oil industry or an environmental group, were thus hired to answer the particular questions posed by these groups, or to seek out material evidence in support of their case either for or against oil development.

This is not at all to say that the material evidence pertaining to ANWR is manufactured, though such accusations have been hurled by others, and in all directions (Cronin 2004, Grunwald 2001), nor that it is indicative of unfit or less than rigorous scientific practice, nor even that it does not valuably contribute to our

collective understanding of the issue and the world. It is to say, however, that data collection and scientific investigation carried out in connection with the drilling debate, as in all other instances as well, requires the establishment of specific research aims and the pursuit of certain lines of inquiry over others, and therefore involves selective rather than comprehensive vision.

Thirdly, materialism is partial in the way that our knowledge of the world is incomplete and unfinished. In describing the ANWR issue, both Arctic Power and NRDC overwhelmingly focus on 'the facts'. They might more accurately claim to focus on certain facts, or a particular set of facts, however. This is because facts are products of ongoing scientific investigation by multiple practitioners at widely dispersed locations, who each utilize the accepted methodologies of their respective establishments and within their delineated disciplines (Gieryn 1983, 1999). Consequently, countless facts are produced contemporaneously, but often in isolation from one another. They are also continually evolving through further investigation, illumination, and incorporation, as well as correction.

Facts sometimes need to be reconciled with other facts, and other times thrown out altogether. 'The facts' put forth by Arctic Power and 'the facts' put forth by NRDC, which conspicuously do not coincide with one another, all result from a socially-embedded and perpetually developing system of knowledge generation. As such, they reflect important pieces of a puzzle (Kuhn 2012), but which can be suggestive or confusing or even misleading when made to stand alone.

In addition to its partiality, the hegemonic materialist frame is technicizing, in that it relegates the negotiation of social, political, and environmental issues to the relevant experts in each of these areas (Barnes and Edge 1982, p. 244, see also 'scientization' in Habermas 2010, p. 70). Further, it is universalizing in its presumption that 'valid' knowledge transcends culture, place, and time, and likewise that its uptake is impersonal and inevitable. I address each of these assumptions and their associated implications, which are closely related, in turn.

#### **4.3.2 Technicization**

Disagreements and deficiencies aside, facts do not exist in a vacuum. Just as they are socially and politically produced, so are they consumed. Facts shape our thinking and inform our decision-making. They are historically, geographically, and

politically situated (Kuhn 2012), and tied up in current usages as well as potential applications. Facts are thus imbued with values, which in turn are informed and shaped by material evidence. Such values provide the necessary context in which scientific data is generated, interpreted, and implemented, though they are actively suppressed through materialist discourses.

In the particular case of socio-environmental issues, conflict is not primarily fueled by factual discrepancies, but by a convergence of practical as well as ideological conceptions, valuations, and contextualizations of nature (Ginn and Demeritt 2003, Castree and Braun 2001, Proctor 1998, Williams 1985). These different variations are many, but for illustrative purposes I outline just a few of the most salient among them here.

Deep ecologists, for example, adopt the biocentric view that all organisms and ecosystems should be preserved for their intrinsic value rather than imposed upon for human appreciation or use (Naess 2010, Guha 1989). Others, namely those who follow the Old Testament (Genesis 1:26-28), believe that God intended for humans to establish dominion over the earth and hence to subdue rather than heed to it (White 2012). More functionalist constructions of the environment include the notion of an 'external nature', referring to the natural setting in which humans live and societies unfold (Nash 2001), as well as the increasingly prevalent 'economic valuation of nature', which compartmentalizes and quantifies the natural world in terms of the goods and services it provides (Gómez-Baggethun et al. 2010, Martinez-Alier 2002).

These wide-ranging environmental conceptions carry very different implications for the course of discussion within the ANWR drilling debate. In addition, the debate juxtaposes clashing visions of national prosperity, individual opportunity, and civic responsibility, on which I elaborate in chapter six. By framing the socio-political conflict over ANWR in material terms, however, Arctic Power and NRDC have collapsed these inherently ethical and ideological issues into a one-dimensional, or in Wynne's (2002) words, "monovalent" (p. 467), technical discussion.

#### **4.3.3 Universalization**

Along the same lines, by allowing facts to stand in for values, and emphasizing the objective over the subjective, the hegemonic materialist frame positions things

rather than people at the forefront of concern. It directs so much attention onto the external world, for example through generalizations and future predictions, and the projected net effects of various proposed courses of action, as to obscure the many diverse human communities who differently value, interact with, and depend on that physical world, and who would be differently or even disproportionately affected by any associated changes.

This universalizing effect of materialist discourses generally, and within environmental debate specifically, has been identified by many critical scholars as most detrimental to poor and minority communities, including indigenous populations (Miller Cantzler 2007, LaDuke 1997). These groups have historically borne the heaviest environmental burdens, reaped the fewest environmental rewards, and have largely been excluded from socio-environmental policy debates (Byrne et al. 2002, Bullard 2000, Williams 1999, Pulido 1996). Through various forms of resistance, however, such groups have fought back against the suppression of their needs and interests.

The Environmental Justice Movement, as a noteworthy example of such resistance, explicitly challenges the notion of environmental interactions, and indeed environmentalism, as universal (Schlosberg 1999). It critiques and at the same time directly engages with the mainstream environmental movement (SWOP 1990), to assert its own particular set of racially and socio-culturally sensitive environmental principles (People of Color 1991). For this reason, the corresponding body of research on and within environmental justice offers many depictions of the kind of socio-structural and political transformation that is both warranted and possible. It also serves as a useful guide for analysis here in distinguishing between the potential impacts and significance of the drilling debate for its most prominent stakeholder groups versus for the underrepresented remainder of the population.

Just as the hegemonic materialist framing of environmental issues enables inadequate acknowledgement of the range of perspectives on, and people invested, in the natural world, so does it undermine the need for reflexivity on the part of the scientists tasked with explaining it. In fact, scientific knowledge is often presented from a “god’s-eye view” (Barnes 2001), as if objective and inevitable, and according to an “internal logic” (Trefil 2003, p. xx). At the same time, however, and somewhat ironically, scientific claims are uniquely convincing because they are buttressed by a

history of professionally standardized practices and deliberately trained practitioners.

The many authoritative roles of science, as an advisor and arbiter of environmental disputes, as well as in courtrooms, advertising, technology, healthcare, agricultural and many other settings, are well documented (Scandrett and Barlow 2003, Demeritt 2001, Barnes and Edge 1982, Oteri et al. 1982). The scientific establishment is given license not only to describe the material world, but to legitimize certain knowledges and delegitimize others, to reinforce social structures and institutional procedures, interpret legislation and effect policy (Gieryn 1999). As such, science is a central pillar of the current social and political-economic order (York and Clark 2010, Suarez-Villa 2009). While its impacts are great and far-reaching however, its accessibility is highly restricted.

Scientists make up an elite and, for the most part, self-designated, self-trained, and self-regulated subset of the population (Barnes and Edge 1982, p. 19, Mulkay 1977). Their aims, activities, and even vocabularies, which draw on the value-neutrality of positivism and objectivism, are differentiated from those of the lay public and instead subjected to an unapologetically insular process of peer-review (Gieryn 1983). They are similarly divorced from democratic ideals and detached from popular demands (Yearley 2005, p. 69). Within capitalist socio-political economies, however, scientists and their professional bodies do respond to market pressure, and thus to patrons with enough capital to sway the market (Kleinman and Vallas 2006, p. 40).

As a result of both the exclusivity of its membership, and the fact that it requires the patronage of benefactors, science is overwhelmingly commissioned, funded, conducted, interpreted, and disseminated by a privileged class of heavily resourced and disproportionately influential, as well as increasingly corporate, decision-makers and “gatekeepers” (Nickles 2002, p. 147, McGinty 1999), to which the oil and environmental lobbies both belong. The same epistemological commitments that discourage reflexivity within the scientific community, however, similarly absolve the solicitors and transmitters of technical information from reflecting on their own prominent positions and extremely effectual roles in the formulation of material knowledge and understanding.

#### **4.4 THE MIDSTREAM**

A number of sociologists of science have conducted investigations into the upstream end of scientific knowledge production, for example considering why is it that certain topics are heavily studied while others remain relatively unexplored, as well as how, and by whom, the resources needed to carry out research projects get allocated (Barnes and Edge 1982). They also look at what incentives drive the efforts of scientists themselves, at both the personal and institutional levels (Hagstrom 1982), revealing that our collective understanding of the material world is involved, unfinished and messy, and sometimes just plain wrong (see "rearview mirror" in Trefil 2003). Other sociologists focus on the downstream end of science, examining the many ways in which scientific knowledge is received by lay individuals and communities or incorporated into public policy, and developing our appreciation for why it is sometimes embraced and other times rejected (Yearley 2005, Wynne 1992).

My interest lies in the midstream. As lobby groups first and foremost, neither Arctic Power nor NRDC is directly involved in conducting the scientific research that is pertinent to the ANWR debate, for example performing environmental impact assessments or collecting biological, seismic and other geological data. Nor does either stakeholder directly engage in the uptake and implementation of scientific knowledge. Rather, these two groups maintain close ties with credentialed scientists, sometimes by assigning them to official posts within the organization or otherwise providing remuneration for consultation and support services, as well as with members of the lay public, through their multi- and mass-media publicity efforts. As a result of these connections, both Arctic Power and NRDC are enabled to sift through, sort out and select excerpts of scientific information to then interpret as they see fit for their respective, vast audiences.

The organizational information made publicly available by each of the two lobby groups, which, it is worth noting, is quite a lot in the case of NRDC and relatively little in the case of Arctic Power, is largely descriptive or even self-promotional rather than reflexive. As mentioned in the previous chapter, they do not offer membership profiles or levels of supporter involvement, or discuss organizational obligations to donors and other constituents. More importantly, though they provide evidence-based accounts of ANWR as the foundations for their respective positions in the drilling debate, neither group candidly situates itself within the involved and complex



processes of data collection and interpretation. This somewhat clandestine *modus operandi* is enabled by the hegemonic materialist frame.

York and Clark (2010), in their own appraisal of materialism, describe that “technological innovations, while not fully determined and constrained by purely capitalist desires, are often developed and employed to service the interests of those in power” (p. 479). Likewise, the overwhelming majority of research considered relevant to the ANWR conflict, including studies conducted by universities and various government agencies, was politically motivated. Much of it, in fact, was commissioned and funded by either the oil industry or mainstream environmentalists, each of which has declared its own ‘special interest’ in the issue and is thus concerned with the potential economic or other profit to be gained by itself and its constituents (see chapter five for specific examples). Thus, the scientists called upon to contribute to the drilling debate were hired to answer the particular questions posed by these groups, and to seek out material evidence in support of the case either for or against oil development.

Herein lies a conundrum that not only underscores the privileged positions of the oil industry and mainstream environmentalists, and by extension their lobby groups, but also exposes the self-perpetuating nature of power itself, as perhaps best articulated in the work of Michel Foucault (1982, 1980). It further reveals the interpretation and communication of science, specifically, as an exercise of power, as similarly described elsewhere by the sociologist and cultural theorist Pierre Bourdieu (2004). Essentially, scientific knowledge, under a cloak of inevitability, enjoys a privileged authority. Such authority is then extended to the elite within society who play an integral role in the production of scientific knowledge. This elite class, in turn, is empowered with the further rendering of inevitability, so as to reinforce the ideologies and institutional structures that support its own dominance, further perpetuating the cycle. Materialism, which renders the world through a scientific lens, is thus hegemonic because it represents the frame of the recognized, rather than of those who seek recognition.

Through technical depictions and descriptions, political actors not only borrow from the authority and socio-cultural prestige of science, but they capitalize additionally on the constitutive, indexical, and persuasive capacities of language itself. As rhetorician Kenneth Burke (1969) explains, language is filled with ambiguity and paradox. Its words offer choices, or “opportunities”, rather than fixed definitions, and

achieve significance and consequence only through usage and in context. As a result, it is the rhetor, even more than the scientist, who performs the inherently moralizing function of ascribing meaning to the world.

Livesey (2002) engages with Burke's theory of "communication as ethics" to demonstrate how ExxonMobil has been able to craft its own identity as a responsible corporate benefactor of society, despite its history of climate change denial, culpability for the catastrophic "Exxon Valdez" 11-million gallon oil spill of 1989 (Alaska DEC 2011), criminal violation of the federal Clean Water Act (USDOJ 2009), and failure to meet numerous global sustainability and ethics standards (Utting and Ives 2006). Livesey describes that "by reframing the public interest in the environment within the terms of the market", the oil giant has been able to "elevate economists, demonize all but a few climate scientists, sideline government, and re-constitute the citizen as consumer" (p. 132). Likewise, the strategic and carefully delivered communications of Arctic Power and NRDC carry political, economic, social, and moral implications.

The language used by these two lobby groups carries extensive and profound impacts. It serves to delineate and define the appropriate roles of government at its various scales, to prescribe the relationship between scientists and policymakers, and to shape our collective thinking about natural resource allocation, indigenous rights, corporate social responsibility, energy security, the notion of justice, and perhaps most importantly, about who to trust (or mistrust) as sources of information on all of the above. These issues are addressed in greater detail in the discourse analysis that ensues, but they lead me to mention here one final implication of the materialism that characterizes the drilling debate, which is that, from a pragmatic perspective, it is counter-productive.

Within a framework that obscures or delegitimizes the socially-embedded processes involved in knowledge generation, there is no mechanism for distinguishing between interpretation and manipulation, or between perspective and bias. Partisan mid-stream actors can very effectively diminish the credibility of their challengers merely by pointing to evidence of emotional investment or to motives that are not purely academic. Likewise, they are encouraged to deny the existence of their own investments and motivations. Such a system is more conducive to antagonism and provocation than to understanding, negotiation, or reconciliation.

Along these lines, the materialist framing of environmental issues lends itself to abstraction and distraction by allowing discrepancies in the details to overshadow more fundamental political and ideological differences. It opens the door to exploitation and distortion by making technical claims the centerpieces of public debate, without providing the necessary context or tools for members of the public to fully understand and evaluate those claims for themselves. Instead, a select few prominent actors are empowered and entrusted to construe important issues for the rest of us, which they typically do, unsurprisingly, in stark opposition to one another.

Within the hegemonic materialist framing of the ANWR debate, there is incentive for each of the pro- and anti-development campaigns to provide an emphatic, unequivocal, streamlined version of the facts to its public audience, and to paint the choice between drilling or not as an obvious one. Chapters five and six explore in detail whether and how they do this, for example by identifying the use of such metaphorical and lexical devices as hyperbole, sensationalism, fear mongering, dehumanization, paradox, dichotomy, and others. Specifically though, as the focus of my analysis is on the implications of the hegemonic materialist frame, I focus on the use of these tactics in conjunction with technical claims.

The intellectual journey of Kenneth Burke, who has significantly contributed to the theories that underpin my research and inform the analysis that follows, was described by Livesey (2002) this way:

*Countering the dominance of empirical scientific inquiry and materialist philosophies of his time, Burke focuses instead on understanding moral controversy [...]. Ultimately, he suggests that science itself is caught up in such controversy, despite its seeming objectivity and neutrality. (p. 120)*

Similarly, the research I present here explores the *moral* controversy of ANWR, in which science is thoroughly caught up. Disputes between Arctic Power and NRDC over the material facts of the associated debate are of course important, and worthy of in-depth discussion, careful scrutiny, and further investigation. However, they represent merely the ‘whats’ of the issue. My research aims to address this deficiency by weaving into the discourse the ‘whos’, ‘wheres’, ‘whens’, ‘whys’, and ‘hows’.

## **CHAPTER 5:**

### **“PORTRAYAL OF THE KNOWN”**

#### ***A CRITICAL ANALYSIS OF SCIENTIFIC DISCOURSES***

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In this chapter I provide a critical analysis of the scientific discourses of Arctic Power and NRDC, and thus unpack the hegemonic materialist framing of the ANWR debate by these two groups. I do so through careful examination of the evidence under consideration in the drilling debate – in other words, by considering that which is ‘known’ regarding the anticipated benefits of developing ANWR and the potential costs to the natural environment. In particular, I explore several technical investigations referenced by the lobby groups, which pertain to the estimated volume of oil contained within ANWR’s reserves, the various projections of domestic job creation, and the likely impact of development on the Porcupine caribou population.

Also through the critical discourse analysis that follows, I identify oppositional narratives employed by Arctic Power and NRDC respectively, which clearly differentiate the groups’ moral standpoints from one another and isolate their political positions. I further trace several of the lobby groups’ contrasting materialist interpretations back to their dissimilar presuppositions. More importantly though, I reveal certain hegemonic ideologies that are common to the discourses of both Arctic Power and NRDC, which underpin the combined pool of scientific data they together invoke, which are reinforced by their various claims based on or otherwise bolstered by that data, and which ultimately perpetuate the shared dominance of these two lobby groups and the powerful special interests they each represent.

#### **5.1 FOCUSING ON OIL**

The drilling debate is not simply about oil. It is also about land rights, natural resource management, private-public relations, global politics, research funding allocation, energy policy, tax policy, lifestyle support, climate change, and much, much more. And yet, the drilling debate is, essentially, about oil. Whereas the issue could have been framed in a number of alternative ways, such as how best to meet America’s energy needs, how to balance development with sustainability, how to lessen U.S. dependence on unstable foreign regimes, or how to boost the national economy and create jobs, it is instead defined, significantly, by a “to drill or not to

drill” ultimatum. As such, it represents the oil industry’s intrusion into nearly all matters of macro-social, -political, and -economic importance. More specifically though, it is a reflection of the oil industry’s role as the primary driver of the ANWR debate and associated controversy. Accordingly, it is illustrative of the role of environmentalists, who prefer to leave the current drilling restrictions in place, as the opposition.

Without the warnings and restraints urged by environmentalists throughout the history of its movement, the environmental effects of industrialization would surely be felt harder, faster, and further. Without industry though, environmentalism would arguably need not exist, at least not in its current form and capacity (Johnson and Frickel 2011). Environmentalism is thus a response to development. Even future energy initiatives proposed or endorsed by NRDC are seen as secondary rather than a guiding force, labeled as ‘alternatives’ or ‘replacements’, and considered peripheral to the drilling debate. This is evident, for example, in Arctic Power’s unspecific and merely intermittent mentions of renewable energy.

Given the pivotal role of discourse in not only interpreting and communicating the significance of relevant material evidence, but also establishing the premise and defining the very terms of the debate itself, this section begins with a discussion of how oil, as the focus of the ANWR drilling debate, is discursively constructed by Arctic Power and by NRDC in contrast to one another. Secondly, I look at a few significant components of the material evidence referred to by each group in assessing and reporting the estimated benefits associated with oil drilling. I also consider how each of the campaigns has responded, or not, to the other’s assertions. The proactive and reactive roles played by Arctic Power and NRDC, respectively, are profoundly important in that they prescribe the discursive relationship of the two groups to one another and to their respective audiences, and thus underpin the entire drilling debate. Moreover, the rhetorical and, at times, dialogical nature of the independent public discourses of these two special interest groups is vividly telling of the power dynamics at play between them.

### **5.1.1 A Basic Necessity**

Arctic Power and NRDC provide fundamentally different constructions of oil as a source of energy. The former group has constructed oil as an invaluable resource and basic necessity of modern civilization. It describes that “[oil] is a perfectly

rational requirement of not only our own, but every other nation's need for energy to power its industry, its homes, and its transportation needs<sup>40</sup>. As such, access to oil is inextricably linked to a thriving society. In the following excerpt Arctic Power further defines oil, along with its counterpart fossil fuels, as an irreplaceable resource, for which no satisfactory surrogates exist.

*Eighty-eight percent of the energy for America's transportation, industry, government and residential needs comes from oil, gas and coal. No combination of conservation, technology or alternatives can come close to replacing these fossil fuels. It will take years for research, testing, permitting, construction, and distribution systems for replacement alternatives to be realized. When alternative energy sources become practical and economical, Americans will use them. Until then, fossil fuels must be relied upon<sup>41</sup>.*

While Arctic Power explicitly justifies and defends the reliance of the United States on oil as an energy source, several embedded assumptions regarding the resource remain implicit. For example, the group presumes that the many activities currently powered by fossil fuels under the energy policy status quo must persist in their present capacity, or even at accelerated levels of production in keeping with an increasing U.S. population. In other words, a description of 'the way things are' has been held up by Arctic Power as evidence for 'the way things must be'.

More importantly, the above excerpt, which is reiterated throughout Arctic Power's website, portrays technological innovation as a prerequisite to social change, and thus the relationship between supply and demand as unidirectional and causal rather than dialectical. In fact, it might be argued from an alternative viewpoint that the social and political will to move away from a heavily fossil fuel-dependent production system would be necessary for research efforts and funding resources to be reallocated away from continued oil production and instead towards finding practical and economical alternative energy sources. The point underscored by Arctic Power, however, is not about moving away from oil at all, but rather embracing its vital role in modern society and, accordingly, concentrating our efforts on its acquisition.

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<sup>40</sup> Retrieved from <http://www.anwr.org/Politics/Alan-Caruba-Reviews-Recent-Insights-into-Peak-Oil.php> on 1 August, 2013.

<sup>41</sup> Retrieved from <http://www.anwr.org/case.htm> on 1 August, 2013.

### 5.1.2 A Dangerous Addiction

NRDC's construction of oil is significantly different from that of Arctic Power. The environmental group concedes that the U.S. is heavily reliant on oil to meet its energy needs. However, in contrast to Arctic Power, it describes this relationship as a "perilous dependence"<sup>42</sup> with devastating consequences, the most notable of which is environmental degradation, as discussed in succeeding sections. More generally though, NRDC's construction of oil as a dangerous drug rather than a basic requirement is reinforced through the group's repeated use of language commonly associated with substance abuse. It refers repeatedly to America's "oil habit"<sup>43</sup>, for example, but reassures its readers that "there is a cure"<sup>44</sup>, and suggests specific steps that must be taken along the "road to recovery"<sup>45</sup>. The group has also published several reports under the titles "Dangerous Addiction", "Addicted to Oil", and "Fighting Oil Addiction", which detail the "energy vulnerability" of each of the fifty states as determined by its reliance on fossil fuels.

Arctic Power's response to the 'addiction' narrative has been to further normalize U.S. dependence on oil by asserting that we "may as well say we're addicted to food or water"<sup>46</sup>. As such, the very reliance of the United States on oil as a primary energy source is pointed to by Arctic Power as evidence of the intrinsic importance and value of the resource, and at the same time by NRDC as an indication of weakness, susceptibility, and liability.

Despite their disparate assessments of U.S. oil dependence, Arctic Power and NRDC share many of the same associations and concerns about current U.S. policies with regard to oil. Both groups, for example, consider the extent of U.S. dependence on foreign oil imports to be a threat to national sovereignty and security

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<sup>42</sup> Retrieved from [http://switchboard.nrdc.org/blogs/dlovaas/map-21\\_forward\\_progress\\_from\\_s.html](http://switchboard.nrdc.org/blogs/dlovaas/map-21_forward_progress_from_s.html) on 4 November, 2013.

<sup>43</sup> Retrieved from [http://switchboard.nrdc.org/blogs/jhorner/californias\\_kicking\\_the\\_oil\\_ha.html](http://switchboard.nrdc.org/blogs/jhorner/californias_kicking_the_oil_ha.html) on 4 November, 2013.

<sup>44</sup> Retrieved from <http://www.nrdc.org/media/pressreleases/030318.asp> on 4 November, 2013.

<sup>45</sup> Retrieved from <http://www.nrdc.org/energy/transportation/files/roadtorecovery.pdf> on 1 August, 2013.

<sup>46</sup> Retrieved from <http://www.anwr.org/Politics/Alan-Caruba-Reviews-Recent-Insights-into-Peak-Oil.php> on 1 August, 2013.

(Schlosser 2006), and invoke the terrorist attacks of September 11, 2001<sup>47</sup> to highlight the danger of financing politically unstable regions around the world. They both also repeatedly describe current energy policies as a drain on the national economy, as well as on the wallets of average Americans. In other words, Arctic Power and NRDC have identified many of the same troubling symptoms of current U.S. energy policy, though their contrasting valuations of oil have led them to starkly different diagnoses of the problem. Herein lies the crux of the ANWR drilling debate.

Arctic Power refers to the immense quantities of oil that are currently imported from foreign producers for domestic consumption as a source of political and economic instability. The oil lobby group therefore depicts ANWR's domestic source of oil as an integral part of the required solution. NRDC, on the other hand, portrays oil dependence itself as the problem, primarily on account of its associated environmental impacts and regardless of the source of the oil. These divergent constructions of ANWR oil, as part of the solution versus as part of the problem, reflect as well as influence each of Arctic Power's and NRDC's interpretations of the available relevant material evidence, to which I now turn my attention.

### **5.1.3 Estimating the Quantity of Oil**

Pro- and anti-drilling stakeholders alike employ the phrase "energy security" to refer to the entangled relationships between economic growth, military and political efficacy, technological innovation, social progress, and the tremendous amount of energy required to fuel all of the above. In fact, the campaigns of both Arctic Power and NRDC are structured around this matrix. It is a repeatedly stated priority of both organizations to achieve long-term energy security, and to do it without negatively impacting the natural environment. The groups' respective assessments of the individual components and variables within this energy security matrix, however, and thus their ultimate estimations of the impacts of drilling, are not at all similar.

This section explores the projected benefits of drilling in ANWR and therefore focuses on the campaign led by Arctic Power, although NRDC's corresponding

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<sup>47</sup> Retrieved from [http://lobby.la.psu.edu/\\_107th/126\\_CAFE\\_Standards\\_2/Organizational\\_Statements/NRDC/NRDC\\_011602.htm](http://lobby.la.psu.edu/_107th/126_CAFE_Standards_2/Organizational_Statements/NRDC/NRDC_011602.htm) and <http://www.anwr.org/features/issues/energy-nat.htm> on 1 August, 2013.



retorts are included as well. The succeeding section addresses the estimated costs associated with oil development in ANWR, particularly with respect to environmental impact, and therefore focuses on the counter-campaign led by NRDC in opposition to drilling.

### *The USGS 1998 Petroleum Assessment*

According to Arctic Power, “ANWR is a win-win-win situation. The environment, the economy, our security, are all protected and improved<sup>48</sup>”. However, forecasts of the various direct and indirect benefits of drilling in ANWR, from increases in domestic energy supply and oil industry jobs to a renegotiation of international trade relations and associated political repositioning, are all initially based on the region’s estimated volume of oil reserves, on which point there is a great deal of uncertainty. A high degree of inconsistency exists even within each of Arctic Power and NRDC’s own websites, likely due to the vast quantity of literature containing volume estimates that the groups have produced over the past several decades, much of which remains on display long after it has become outdated. Even so, a far greater discrepancy lies between the two lobby groups’ representations of ANWR’s oil reserves. Before discussing the specific projections reported by each of the lobby groups though, I shall provide a brief overview of the primary study from which they are derived below.

As the ANWR region is inaccessible to heavy machinery and off-limits to nearly all development and exploratory activities, the available information regarding the estimated oil reserves in ANWR is limited. Since 1980, nearly a dozen government-sanctioned assessments of Area 1002 have taken place, including by the United States Geological Survey (USGS), the State of Alaska, the Bureau of Land Management, the Energy Information Association, the American Association of Petroleum Geologists, and the General Accounting Office (Bird 1998). My focus here is on the most recent, comprehensive, and widely referenced assessment by both Arctic Power and NRDC, which was initially published by the USGS in 1998 and then released again in 2001 with an updated economic analysis (USGS 2001).

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<sup>48</sup> Retrieved from [http://www.anwr.org/images/pdf/2011\\_PowerPt\\_on\\_ANWR.pdf](http://www.anwr.org/images/pdf/2011_PowerPt_on_ANWR.pdf) on 1 August, 2013.

The USGS is a federal agency. Its budget is allocated by the legislative branch of the United States federal government, the U.S. Congress, and its agenda is set by the executive branch, consisting of the President of the United States and his appointed cabinet. As oil development has been a high-profile and contentious topic at all levels of government for many decades now, it is a defining issue on which individual members of Congress, as well as the President, are judged by their constituents and special interest groups across the political spectrum. As such, the USGS researchers tasked with assessing the petroleum reserves within ANWR, were charged with providing highly consequential and potentially inflammatory data to their own employers, some of whom were bound to be disappointed.

To give additional context to the 1998 assessment, it is helpful to know that at the time of its inception three years earlier, tensions between conservatives and liberals in the U.S. government had reached a breaking point. In fact, there were two separate periods of “government shutdown<sup>49</sup>” in the final months of 1995 due to the fact that a 1996 Congressional budget simply could not be agreed upon. Further, a direct connection exists between those periods of government shutdown and Area 1002. A proposed budget bill passed by the majority-Republican<sup>50</sup> Congress during the short interim between the two shutdown periods included a provision for drilling in ANWR. The bill was vetoed, however, by Democratic President Bill Clinton. Far from being apolitical, as science is often presumed to be (Barnes and Edge 1982, pp. 10-11), the conciliatory executive decision to reassess the amount of petroleum reserves in Area 1002 that came just months later was in fact sparked by political controversy.

From the outset of the Area 1002 assessment, the stated aim of the USGS was “to provide the Federal Government with timely scientific information in support of decisions regarding land management, environmental quality, and economic and strategic policy” (USGS 2001, p. 1). It was less clear, however, about the ways in

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<sup>49</sup> A government shutdown can occur at any level of government, and in the case of the federal government in 1995-1996, resulted from the inability of Congress and President Clinton to reach agreement on a budget for the coming fiscal year. This “budget impasse” resulted in a total of 28 days, split between two periods of shutdown, during which all non-essential government services and operations were suspended, and the federal employees who performed them relieved of their duties without pay, before an agreement was finally reached.

<sup>50</sup> Republicans enjoyed a majority in both chambers of the 104th US Congress, consisting of the Senate and the House of Representatives, which met during 1995-1996.

which the research itself was politically informed, or at times constrained. For instance, the only available seismic data on Area 1002 were initially generated by a petroleum-industry consortium, which has, even to date, shared only a portion of its collected information and kept other parts confidential (USGS 2001, p. 2). Further, those data were recorded in 1984 and 1985, and were thus already over a decade old by the time the USGS study was conducted. As the input of seismic data was critical to its methodology, however, and as the gathering of new seismic data was prohibited, the USGS chose to carry out its own petroleum assessment based on a “reassessment” and “reprocessing” of the raw industry data.

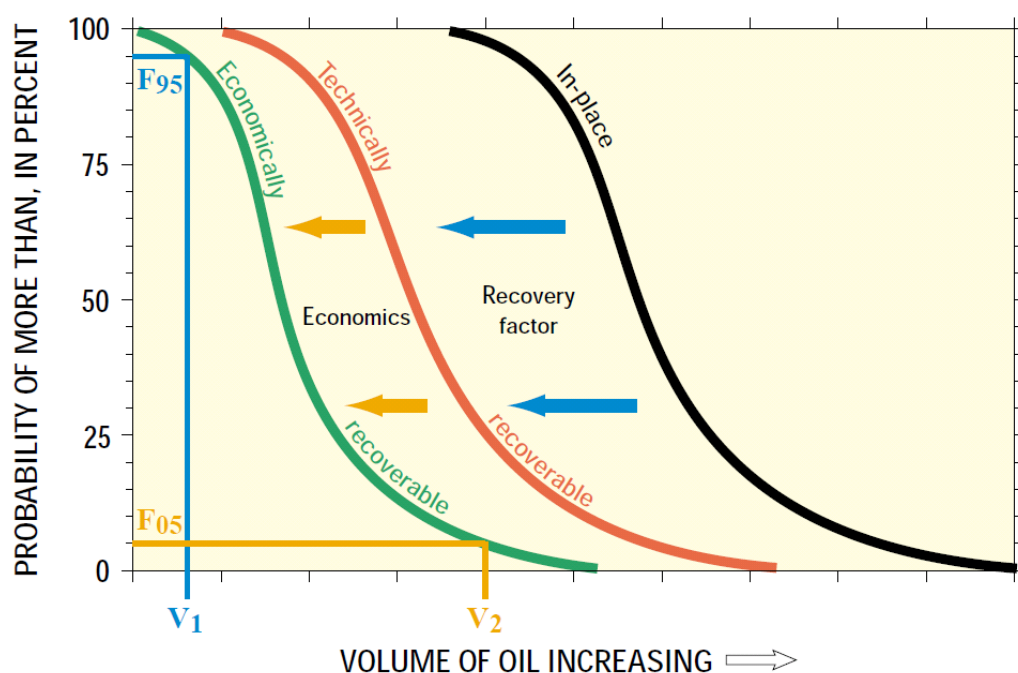
The particular methodologies, procedures, assumptions, and indices employed by the USGS, such as splitting the rock under investigation into the dichotomous categories of ‘deformed’ or ‘undeformed’, or reporting numerical results at 5- and 95-percent probability levels, are explained and justified in terms of institutionally accepted standards. In fact, the study overall relies heavily on a complex and multi-layered system of computer modeling to estimate petroleum reserves based on a very limited amount of observed, or ‘confirmed’, information. In this way, its findings both depend on and contribute to highly technical, exclusive, ‘expert’ knowledge, which is legitimized more by public trust (Nelkin 1982) than by public understanding.

The results of the USGS assessment are presented as a series of curves representing numerous hypothetical scenarios within ten subsections<sup>51</sup> of the greater Area 1002 area<sup>52</sup>, and projected at varying degrees of certainty. The graph reproduced in Figure 5-1, which was included in the 1998 USGS Fact Sheet, displays the estimated volumes of in-place oil, technically recoverable oil, and economically recoverable oil, as black, red, and green lines, respectively. The blue and orange lines are provided for easier readability and to demonstrate that, for example, there is a 95% chance of at least volume V1 of economically recoverable oil, and a 5% chance of at least volume V2 of economically recoverable oil.

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<sup>51</sup> These subsections are called “petroleum plays”, or simply “plays” and actually refer to distinct volumes of geologically similar rock, which were assessed individually.

<sup>52</sup> The total area assessed included the Federal lands contained within Area 1002, as well as Native lands within Area 1002, and also State waters, which are those within a 3-mile boundary of the coast. Results are aggregated to 1) the entire assessment area, 2) the portion of Area 1002 land that is federally owned, and each of the two distinct categories of “plays”.



**Figure 5-1: USGS Petroleum Assessment of ANWR** (USGS 2001, p. 4)

Throughout the USGS report, estimates of economically recoverable oil are largely referred to in relationship to other variables, such as market price, return on capital, and production costs, rather than as specific volumes, or even ranges of volumes. This is also the case with in-place and technically recoverable oil (Schuenemeyer 1999, Table AO-3). Several numbers corresponding to points along the red and black curves in Figure 5-1 are indicated in detailed assessment reports by the USGS (Schuenemeyer 1999, Bird 1998), one of which in particular is mentioned more than any other. As the summary section of the USGS *Assessment Overview* describes, “this study estimates that the total quantity of technically recoverable oil in the 1002 area is 7.7 BBO<sup>53</sup> (mean value)” (p. AO-23). This mean value, while highlighted in the USGS report, is not prominently featured in the literature of either Arctic Power or NRDC.

In relaying the data from the above USGS study to its respective audiences, Arctic Power and NRDC provide very different interpretations, as well as points of emphasis. Each reads its own significance, for example, into the loophole in

<sup>53</sup> BBO is the acronym for ‘billion barrels of oil’. MMBO is the acronym for ‘million barrels of oil’, not to be confused with MBO, which is the acronym for ‘thousand barrels of oil’.

available evidence pertaining to the percentage of technically recoverable oil that is also economically recoverable. Both groups also quote values at one or the other extreme end of the ranges provided by the USGS to reinforce their respective hyperbolic descriptions of petroleum reserves in ANWR. The oil lobby group, for instance, most frequently describes the quantity of ANWR's oil in the context of proven national, rather than global, reserves, thus ranking it among the highest producing oil field complexes. Representations of ANWR's oil in the context of the total estimated global supply, as offered by the environmental lobby group, alternatively place it below the third percentile, a point on which I elaborate below.

Arctic Power's website in particular is inundated with information, some of which is self-contradictory, about the amount of oil in ANWR. It portrays a myriad of statistics, percentages, and technical analogies, often without the required background or explanation to render them meaningful. For example, on the page of its website entitled "How much oil is in ANWR?", Arctic Power proclaims that, "geologists agree that the Coastal Plain has the nation's best geologic prospects for major new onshore oil discoveries<sup>54</sup>". The lobby group also refers specifically to the 1998 USGS study as "the most recent petroleum assessment", but describes only that its findings "increased the estimate for technically recoverable mean crude oil resources"<sup>55</sup>. A link to the USGS study is provided elsewhere on the lobby group's website<sup>56</sup>, but this 'How much Oil' page is dedicated instead to a list of incongruent and nonsequential excerpts from earlier assessments, several of which I include below (listed in the order they appear):

*According to the Department of Interior's 1987 resource evaluation of ANWR's Coastal Plain, there is a 95% chance that a 'super field' with 500 million barrels would be discovered.*

*DOI also estimates that there exists a mean of 3.5 billion barrels, and a 5% chance that a large Prudhoe Bay<sup>57</sup> type discovery would be made.*

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<sup>54</sup> Retrieved from <http://www.anwr.org/Background/How-much-oil-is-in-ANWR.php> on 1 August, 2013.

<sup>55</sup> It is worth noting that this quote is followed by the comment "See Oil in the ANWR? It's Time to Find Out!", but that a hyperlink for that page does not exist, nor did the site's search engine produce any results under that title.

<sup>56</sup> Retrieved from <http://www.anwr.org/Resources.php> and <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 1 August, 2013.

<sup>57</sup> The Prudhoe Bay oil field, located approximately 100 miles west of ANWR at the top of the Trans-Alaskan pipeline, is the largest in North America. According to the site operator, BP

*In 1980, the U.S. Geological Survey estimated the Coastal Plain could contain up to 17 billion barrels of oil.*

*The U.S. Department of Interior (DOI), in its April, 1987 report [...] estimates that 'in-place resources' range from 4.8 billion to 29.4 billion barrels of oil. Recoverable oil estimates range from 600 million barrels at the low end to 9.2 billion barrels at the high end.*

*The most recent petroleum assessment prepared by the USGS in 1998 increased the estimate for technically recoverable mean crude oil resources.*

*In 1996 the North Slope oil fields produced about 1.5 million barrels of oil per day, or approximately 25 percent of the U.S. domestic production.*

These excerpts are all found on the same page, but numerous other characterizations and estimates of the amount of oil on the Coastal Plain appear throughout the remainder of Arctic Power's website, including that ANWR "could produce up to 17 billion barrels<sup>58</sup>", and "up to 1.5 million barrels per day for at least 25 years<sup>59</sup>", and "enough to replace 30 years of Saudi Arabian imports<sup>60</sup>". In none of these cases, however, does Arctic Power account for the variable costs or conditions that were used in the calculation of these figures. It is neither economically or geologically feasible, for example, that a steady rate of production could be maintained over a 25-year period. Though the parameters within which its many and varied petroleum projections were generated are unspecified, Arctic Power's overarching message on the issue is clear: there is a lot of oil in ANWR.

In stark contrast to the above, NRDC declares about ANWR that, "there is relatively little oil there, if any<sup>61</sup>". Like its pro-drilling counterpart, the environmental lobby group uses evocative analogies, hyperbole, and extreme-case scenarios to depict the Coastal Plain's petroleum reserves, although with the effect of diminishing rather than augmenting them.

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Exploration, Prudhoe Bay's total reserves are estimated at 12.8 BBO, of which more than 10 BBO have been recovered.

<sup>58</sup> Retrieved from [http://www.anwr.org/images/pdf/2011\\_PowerPt\\_on\\_ANWR.pdf](http://www.anwr.org/images/pdf/2011_PowerPt_on_ANWR.pdf) on 1 August, 2013.

<sup>59</sup> Retrieved from <http://www.anwr.org/Background/Making-the-Case-for-ANWR.php> on 1 August, 2013.

<sup>60</sup> Retrieved from <http://www.anwr.org/features/pdfs/myths-flyer3.pdf> on 1 August, 2013.

<sup>61</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp> on 1 August, 2013.

One way NRDC does this is by focusing almost exclusively on the projections of economically recoverable oil reported in the results of the USGS 1998 petroleum assessment, as in the following.

*The most recent USGS analysis projected that the amount of economically recoverable oil -- the fraction that can be extracted, transported and sold at a profit at various prices -- is 3.2 billion barrels at \$20 a barrel<sup>62</sup>.*

Here NRDC provides an explanation of the specific estimate it relays from the USGS report, including a footnote that directly references the 1998 study, as well as the added piece of information about the cost per barrel used to calculate that estimate. At the same time, the global context in which the environmental lobby group depicts the Coastal Plain's reserves, in contrast to Arctic Power's description relative to the nation's other prospects, further minimizes ANWR oil, as seen below.

*The amount of economically recoverable oil in the refuge, according to U.S. Geological Survey (USGS) estimates, would increase world reserves by only 0.3 percent<sup>63</sup>.*

*Oil from the refuge would hardly make a dent in our dependence on foreign imports<sup>64</sup>.*

NRDC's claims regarding the amount of oil in ANWR, like Arctic Power's, are heavily quantitative and highly detailed. As a result, they carry a certain legitimacy and seeming objectivity. I argue, however, that they are impressively authoritative at the expense of being sufficiently nuanced. The lobby groups' declarations together serve a muddling as opposed to clarifying purpose, in that they apparently contradict directly with one another. Yet, it is possible that the amount of oil in ANWR is both enough to offset Saudi oil for 30 years, as Arctic Power alleges, and at the same time "less oil than we consume in a single year<sup>65</sup>", as NRDC contends<sup>66</sup>.

Finally, NRDC's interpretation of the 1998 USGS study serves to reinforce the lobby group's 'addiction' narrative, by describing that no amount of oil would satiate our thirst for oil. The group explains, on a page entitled, "Why trash an American

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<sup>62</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farcjobs.asp> on 1 August, 2013.

<sup>63</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farcjobs.asp> on 1 August, 2013.

<sup>64</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 1 August, 2013.

<sup>65</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp> on 1 August, 2013.

<sup>66</sup> In 2011, for example, Saudi imports of crude oil represented just 6.2% of total US consumption (EIA 2013a).

treasure for a tiny percentage of our oil needs<sup>67</sup>”, that “the refuge would produce a paltry 3 percent of Americans' daily consumption”. Its overall message can therefore be summed up by the following comment, from the same page: “Whatever oil the refuge might produce is simply irrelevant to the larger issue of meeting America's future energy needs”. In attempting to pivot the conversation about oil to one about energy efficiency and renewables, as it does on numerous other occasions, NRDC adds that, “if America made the transition to [more efficient vehicles], far more oil would be saved than the Arctic Refuge is likely to produce<sup>68</sup>”.

Arctic Power's summarizing remarks on the USGS study and previous assessments of petroleum in ANWR are quite the opposite. The oil lobby group argues that “the validity of these estimates can be proved only by drilling exploratory wells<sup>69</sup>”, and so depicts development of the Coastal Plain as the appropriate and inevitable course of action. Arctic Power thus reaffirms its construction of ANWR oil, not as a problem, but as the solution.

#### **5.1.4 Calculating the Benefits of ANWR Development**

Given the number of variables and unknowns involved in simply assessing the available reserves of oil in ANWR, it follows that assessment of the various energy security benefits associated with drilling for that oil is even more laborious, contingent, and layered. In particular, the science of predicting state and federal revenues that might be generated, as well as jobs that might be created, each come with an additional set of interdependent variables and dynamic unknowns. Among these are the timing as well as pace of petroleum production, the cost of drilling operations, the size distributions of individual oil fields, the response of the Organization of Petroleum Exporting Countries (OPEC) to the introduction of ANWR oil into the global market, and a host of other market conditions.

This next section considers the implications of ANWR development for the national economy and employment specifically, as reported by Arctic Power and NRDC. The thread of the drilling debate that pertains to money and jobs is particularly ripe for Critical Discourse Analysis and the unmasking of systemic social inequality because

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<sup>67</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 1 August, 2013.

<sup>68</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 1 August, 2013.

<sup>69</sup> Retrieved from <http://www.anwr.org/Background/How-much-oil-is-in-ANWR.php> on 7 August, 2013.



it refers to, and is also targeted at, blue collar, low-income or unemployed, and often minority families who, for example, are hit hardest by economic downturns, who struggle most to pay their monthly energy bills and fill their gas tanks, and who would also most likely seek entry-level employment in the industry sector.

Arctic Power, who projects a substantial amount of oil to be contained within ANWR, estimates the associated potential benefits of drilling to be equally great. One of these associated benefits, according to the oil lobby group, would be significantly lowered gas prices, as its webpage headlines “Worried About Fuel Prices?”<sup>70</sup> and “The Gas Prices We Deserve”<sup>71</sup> suggest. The group reasons that “adding oil to the market, from any source, will have an effect on price. This WILL result in decreased prices at the pump”<sup>72</sup>. The following excerpt from an editorial published in 2008 by one of Arctic Power’s “host guest writers” elaborates on this argument.

*With the price of oil hitting more than \$80 per barrel, one would think that Congress would be inclined to opening access to those billions of barrels, but [it] is more concerned about a bogus global warming than it is about insuring Americans can drive their cars and trucks, heat their homes, and process oil for the countless products it produces*<sup>73</sup>.

An op-ed column from the Washington Post (Will 2008), which was reprinted on Arctic Power’s website, offers a similar critique. It describes high gasoline prices as “a predictable consequence” of electing politicians who oppose drilling in ANWR, and argues that, “disqualified from complaining [about the cost of gas] are all voters who sent to Washington senators and representatives who have voted to keep ANWR’s oil in the ground”<sup>74</sup>.

As with other aspects of the drilling debate, Arctic Power’s message here is that the facts are straightforward and unequivocal: domestic oil development would ease

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<sup>70</sup> Retrieved from <http://www.anwr.org/OCS/Worried-About-Fuel-Prices-ANWR-Equals-30-Years-of-Saudi-Oil.php> on 1 August, 2013.

<sup>71</sup> Retrieved from <http://www.anwr.org/Latest-News/The-Gas-Prices-We-Deserve.php> on 1 August, 2013.

<sup>72</sup> Retrieved from <http://www.anwr.org/Latest-News/Foreign-Oil-GOOD-Alaskan-Oil-BAD-The-SPR-Effect.php> on 1 August, 2013.

<sup>73</sup> Retrieved from <http://www.anwr.org/Politics/Alan-Caruba-Reviews-Recent-Insights-into-Peak-Oil.php> on 1 August, 2013.

<sup>74</sup> Retrieved from <http://www.anwr.org/Latest-News/The-Gas-Prices-We-Deserve.php> on 1 August, 2013.

economic burdens and improve the lives of “ordinary”<sup>75</sup>, hard-working Americans. The group further attributes any departure from this stance to ignorance and persuasion by sensationalist “scare stories”<sup>76</sup> and baseless claims by environmentalists.

This message is especially pronounced in remarks by the Chairman of the Congress on Racial Equality (CORE), which is prominently featured throughout the oil lobby group’s website. CORE is a civil rights organization that lobbies for “equality of economic opportunity”<sup>77</sup> in both the public and private sectors of the United States, which it considers “the final frontier for civil rights”. Similarly, Arctic Power describes CORE’s mission as “to protect the rights of minority groups to have access to cheap reliable home grown energy” and also asserts that “the effect of radical environmentalism is felt most acutely by America’s poor and minorities”<sup>78</sup>. The oil lobby group’s webpage entitled “C.O.R.E. Rallies for ANWR” explains,

*The lack of basic knowledge of the energy situation in this nation, particularly with regard to facts on supply and demand of oil, is being taken advantage of by environmental groups in campaigning to lock up America’s resources, [...which] Chairman Innis states, equates to higher energy prices which cannot be paid for by many lower income families*<sup>79</sup>.

The emphasis on facts over fringe interests demonstrated above is reiterated in the equally accusatory response of environmentalists. The latter aim to discredit the Chairman’s position on domestic drilling by pointing to the more than 325,000 dollars in donations made to CORE by ExxonMobil<sup>80</sup> (Greenpeace Investigations 2013, Greenpeace 2013, Exxpose Exxon 2011, Mooney 2005,) during his tenure.

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<sup>75</sup> Retrieved from <http://www.anwr.org/Latest-News/C.O.R.E-Rallies-for-ANWR.php> on 1 August, 2013.

<sup>76</sup> Retrieved from <http://www.anwr.org/Latest-News/Roy-Innis-on-American-Energy-and-ANWR.php> on 1 August, 2013.

<sup>77</sup> Retrieved from <http://www.core-online.org/Features/what-is-core.htm>, linked from <http://www.anwr.org/Latest-News/Roy-Innis-on-American-Energy-and-ANWR.php> on 1 August, 2013.

<sup>78</sup> Retrieved from <http://www.anwr.org/Latest-News/C.O.R.E-Rallies-for-ANWR.php> on 1 August, 2013.

<sup>79</sup> Retrieved from <http://www.anwr.org/Latest-News/C.O.R.E-Rallies-for-ANWR.php> on 1 August, 2013.

<sup>80</sup> ExxonMobil is also the subject of similar investigations by the Exxpose Exxon campaign, which represents "a collaborative effort of some of the nation's largest environmental and public advocacy organizations [including NRDC] to educate and activate the public about ExxonMobil's efforts to block action on global warming, drill in the Arctic Refuge, and keep America addicted to oil" (Exxpose Exxon 2011).

Environmentalists also offer an alternative presentation of the facts on oil supply and demand.

NRDC, like Arctic Power, laments the effects of high gas prices on financially struggling Americans<sup>81</sup>, but it contends that, “with only two percent<sup>82</sup> of the world's reserves, the U.S. contribution to the global market could never be high enough to significantly alter world oil prices<sup>83</sup>”. A blog post by an NRDC staffer reiterates that, “America does not control the 80-plus-million-barrel-daily oil market, and we never will<sup>84</sup>”. Rather than to increase the global supply of oil, NRDC's president and CEO suggests, in a blog post entitled “6 Things We Can Do in the Face of Rising Gas Prices<sup>85</sup>”, that our best tool for lowering oil prices is to drive down global demand, of which the U.S. is responsible for 25%. Coincidentally, a decrease in demand for oil, accompanied by a decrease in its market price, would also lead to a decrease in the total amount of economically recoverable oil in ANWR and thus de incentivize drilling even further.

In addition to serving the economic interests of individuals and families, Arctic Power claims that drilling in ANWR would strengthen the U.S. economy. It describes that “between 1977 and 2004 the Arctic oil industries spent over 50 billion dollars within the nation's economy,” on things like materials, salaries, design, engineering and construction services<sup>86</sup>. Along the same lines, the group insists that ANWR development would alleviate the national debt by reducing the cost of imported oil. It argues that, “the U.S. imports 61% of our oil from abroad. That represents over

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<sup>81</sup> Retrieved from <http://www.nrdc.org/energy/gasprices/> on 7 August, 2013.

<sup>82</sup> Domestic oil is reported at 3% of global reserves elsewhere on NRDC website, e.g. [http://switchboard.nrdc.org/blogs/dlovaas/drilling\\_stick\\_to\\_the\\_facts.html](http://switchboard.nrdc.org/blogs/dlovaas/drilling_stick_to_the_facts.html) (retrieved 1 August, 2013.).

<sup>83</sup> Retrieved from <http://www.nrdc.org/energy/oildrilling/> on 1 August, 2013.

<sup>84</sup> Retrieved from [http://switchboard.nrdc.org/blogs/dlovaas/running\\_on\\_empty\\_tour\\_is\\_empty.html](http://switchboard.nrdc.org/blogs/dlovaas/running_on_empty_tour_is_empty.html) on 1 August, 2013.

<sup>85</sup> Retrieved from [http://switchboard.nrdc.org/blogs/fbeinecke/6\\_things\\_we\\_can\\_do\\_in\\_the\\_face.html](http://switchboard.nrdc.org/blogs/fbeinecke/6_things_we_can_do_in_the_face.html) on 1 August, 2013.

<sup>86</sup> Retrieved from <http://www.anwr.org/images/pdf/63008USAjobsmap.pdf>, <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php>, and <http://www.anwr.org/features/pdfs/employment-facts.pdf> on 1 August, 2013.

\$400 billion dollars a year being sent abroad. Oil imports are the single largest contributor to our national debt<sup>87</sup>”.

As seen before, NRDC’s argument is the inverse of Arctic Power’s. The environmental lobby group promotes the idea of eliminating tax subsidies to oil companies, which average more than ten billion dollars annually (Follow The Money 2013), as a more direct and immediate way to reduce the national debt<sup>88</sup>. NRDC has also created its own Center for Market Innovation (CMI) aimed at “redirecting capital flows toward sustainable uses<sup>89</sup>”, the ultimate goal of which is “to help finance the shift to a green economy<sup>90</sup>”.

In an article entitled “The Reality of the Oil Tax Subsidies Debate<sup>91</sup>”, however, Arctic Power wholly endorses oil tax subsidies. It describes them as “necessary to encourage capital investment and continued growth”, not unlike the protective measures afforded to agriculture, mining, and other industries considered fundamental to national prosperity, and thus reaffirms its construction of oil as a vital commodity. The oil lobby group also points to the billions of dollars that the oil industry contributes to the national treasury every year, despite its hefty tax breaks. On ANWR specifically, the group calls attention to potential revenues to both state and federal treasuries from bonus bids, lease rentals, royalties, and taxes, projecting them to be on the order of hundreds of billions of dollars<sup>92</sup>.

Arctic Power’s discourse not only paints the oil industry as a national benefactor, and normalizes the taxpayer assistance it receives, but it also characterizes the potential reduction of such assistance as an active cause of widespread harm. The group warns, “rash decisions that abolish oil and gas subsidies can significantly

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<sup>87</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 1 August, 2013.

<sup>88</sup> Retrieved from [http://docs.nrdc.org/legislation/files/leg\\_11080901a.pdf](http://docs.nrdc.org/legislation/files/leg_11080901a.pdf), [http://switchboard.nrdc.org/blogs/fbeinecke/responsible\\_debt\\_reduction\\_sho.html](http://switchboard.nrdc.org/blogs/fbeinecke/responsible_debt_reduction_sho.html), and <http://www.nrdc.org/energy/files/fossilfuel4.pdf> on 7 August, 2013.

<sup>89</sup> Retrieved from <http://www.nrdc.org/greenbusiness/cmi/> on 20 November, 2013.

<sup>90</sup> Retrieved from <http://www.nrdc.org/greenbusiness/cmi/files/CMI-BusinessPlan.pdf> on 20 November, 2013.

<sup>91</sup> Retrieved from <http://www.anwr.org/Latest-News/The-Reality-of-the-Oil-Tax-Subsidies-Debate.php> on 1 August, 2013.

<sup>92</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 1 August, 2013.

diminish both American energy production and job growth<sup>93</sup>. This argument reflects Arctic Power's broader position on ANWR, which is both that its continued undevelopment would result in economic hardship and job loss, and also that its development would improve the health of the U.S. economy and create many new jobs.

#### The WEFA Group 1990 Economic Impact Assessment

The claim that drilling in ANWR would create a significant number of jobs has increasingly become the keystone of the national pro-drilling campaign. This is represented by Arctic Power's slogan, "jobs and energy for America", which appears in the top bar of every page on its website. It is also evident in the crafting of proposed pro-development legislation, such as the "American Energy and Infrastructure Jobs Act"<sup>94</sup>, the "Alaskan Energy for American Jobs Act"<sup>95</sup>, and the "Alaskan Jobs & Energy Act"<sup>96</sup>, which would all permit drilling in ANWR if passed by the U.S. Congress.

Arctic Power repeatedly reports that 735,000 jobs would be created across the fifty U.S. states, were ANWR to be opened to development. This projection is occasionally rounded up<sup>97</sup> or down<sup>98</sup> and thus varies a bit throughout the lobby group's website, but appears nonetheless on multiple pages as well as in PDF format for printing and distribution<sup>99</sup>, as in the excerpt below.

*The U.S. economy benefits from domestic production when new construction, service, manufacturing, and engineering jobs are created. These jobs occur in all 50 states. A national impact study by Wharton*

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<sup>93</sup> Retrieved from <http://www.anwr.org/Latest-News/The-Reality-of-the-Oil-Tax-Subsidies-Debate.php> on 1 August, 2013.

<sup>94</sup> Retrieved from <http://www.anwr.org/Latest-News/Committee-Passes-Bill-to-Open-3-of-ANWR.php> on 2 August, 2013.

<sup>95</sup> Retrieved from <http://www.anwr.org/Politics/Hastings-and-Boehner-Push-ANWR.php> on 2 August, 2013.

<sup>96</sup> Retrieved from <http://www.anwr.org/Latest-News/ANWR-Provision-Starts-Congressional-Journey.php> on 2 August, 2013.

<sup>97</sup> Retrieved from <http://www.anwr.org/features/pdfs/employment-facts.pdf> on 1 August, 2013.

<sup>98</sup> Retrieved from <http://www.anwr.org/Background/Making-the-Case-for-ANWR.php> on 1 August, 2013.

<sup>99</sup> Retrieved from <http://www.anwr.org/images/pdf/63008USAjobsmap.pdf> on 2 August, 2013.

*Econometrics estimates total employment at full production in ANWR to be 735,000 jobs<sup>100</sup>.*

As Arctic Power indicates, the 735,000 figure was generated in a 1990 study by the WEFA Group, made up of a conglomerate of corporations tasked with financial analysis, econometric modeling, and economic forecasting, including the merged companies previously known as Wharton Econometrics and Chase Econometrics. The study, entitled “The Economic Impact of ANWR Development” (WEFA Group 1990), has been extremely successful in bolstering the argument that drilling in ANWR would serve to boost the economy, in particular because it would create jobs. It has been referenced and reproduced, though not always directly cited, by numerous industry, pro-oil, or other groups in addition to Arctic Power, including the Teamsters union (Teamsters 2001) and The Heritage Foundation (Coon 2001), but has also stirred up a furious reaction from drilling opponents. The following paragraphs describe certain significant parameters of that study, and offer further discussion of the context in which it was carried out.

The WEFA Group study was commissioned by the American Petroleum Institute (API), which is a trade association responsible for advocacy and negotiation on behalf of the oil industry. In the study, two distinct U.S. macroeconomic outlooks were provided for the 20-year period following its publication, between 1990 and 2010: one in which ANWR development was carried out, and the other in which it was not.

When API commissioned the study, it also prescribed certain “features” of its investigation. For instance, API provided the WEFA Group with particular development scenarios to consider, the attributes of which captured a range of “plausible variations” (p. 5). The study was therefore designed to address specific hypothetical questions posed by API, which is wholly supportive of and heavily invested in ANWR’s development, rather than, for instance, to predict the most probable economic outcome. The WEFA Group additionally describes increasing oil prices, a continuing decline in U.S. oil production, and increasing dependence on foreign oil imports as central features of its economic outlook.

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<sup>100</sup> Retrieved from <http://www.anwr.org/features/pdfs/employment-facts.pdf> on 2 August, 2013.

The primary methodology of the study involved multi-layered econometric modeling, the models for which were also created by the WEFA Group. “The WEFA World Oil Model” and “The WEFA Long-term Annual Model of the U.S. Economy” each require the input of multiple, interdependent datasets. As the WEFA Group itself explains, the various conditions and assumptions contained within these datasets are many and complex. For example,

*A determination of the future level of imports requires projections of domestic demand, but before that we need projections of income, industrial production, and the other economic determinants of demand (p. 12).*

In a synopsis of the overarching task of its impact study, the WEFA Group further describes,

*The outlook for the U.S. economy over the 1990 to 2010 period is determined by assumptions made concerning demographics, productivity, monetary and fiscal policy, energy prices, exchange rates, and the behavior of the rest of the world (p. 12).*

In other words, results produced through modeling are heavily dependent on the “alignment” (p. 46) of the models themselves, as well as on the conditions and assumptions provided to them.

The substantial amount of required input data for the WEFA Group study was sourced from several different organizations and previous studies, including from the USGS, the U.S. Census Bureau, the National Petroleum Council, the Independent Petroleum Association of America, the API itself, and others selected by its authors. Just as significantly, not included for consideration by the WEFA Group were any data generated by environmental think tanks, conservation economists or policy analysts, the coal industry, the nuclear power industry, the hydroelectric industry, or any renewable energy industries, which have elsewhere made very different assumptions and offered vastly dissimilar projections from the contributing organizations.

The WEFA Group also exercised judgment and discretion, in accordance with the particular goals of its study and on the basis of the features prescribed by the API, to determine which of the facts and figures made available by the above organizations to include in its own analysis. In the following excerpts, for example, the WEFA

Group draws its own highlights from the available data, and in some instances, further offers its own qualification or alternative assessment.

*While the amount of recoverable oil available in the Alaska Natural Wildlife Refuge [sic] is presently unknown, the U.S. Geological Survey (USGS) has published a mean conditional estimate of recoverable oil from ANWR of 3.23 billion barrels of oil, and more optimistic USGS estimates place total reserves at 9.24 billion barrels. In the body of this report, the higher level of USGS estimated reserves is assumed (p. 6).*

*Population growth is one of the most important determinants of long-term economic growth from both the supply and the demand sides of the economy. Our population projections are based on assumptions used by the U.S. Census Department for its projections--the middle assumptions for fertility and life expectancy but the high assumption for net immigration. The middle assumption for net immigration seems implausibly low in light of the actual immigration experience of recent decades (p. 12).*

Additional key assumptions of the input data selected by the WEFA Group pertain to drilling and recovery costs, production lead times, changes in the U.S. labor force, adjustments to inflation and interest rates, the value of the dollar, global demand for oil and petroleum products, the behavior of OPEC, the rate of global economic growth, developments within other energy supply industries, and many more (outlined in WEFA Group 1990, chapters 2 and 3). The point here is that the WEFA Group held a tremendous amount of responsibility, to its trade and training broadly, and to API as its client in particular, in setting the parameters for the analysis and reporting of its ANWR economic impact study. All of these things culminate in the production of knowledge from an analytical standpoint that is, firstly, politically- and commercially-laden, and secondly, disproportionately well-informed about as well as favorable to petroleum production.

Another related and implicit feature of the above study is that it subscribes to a specifically capitalist economic philosophy. The WEFA Group brings to its analysis certain underlying principles about, for example, the wisdom and efficiency of the profit imperative, the contributions of the private sector to the society at large, and the notion that “the social good will be maximized by maximizing the reach and frequency of market transactions” (Harvey 2007, p. 3). In a poignant example of this, the capitalist notion that business can be justified on the very basis that it is able to exist, is echoed below.



*The interest of the petroleum industry in the development of ANWR implies that the industry believes that ANWR petroleum resources can be developed and delivered to domestic markets at a cost lower than that of purchasing an equivalent quantity of imported oil on the world market. This saving is the principal direct benefit to the nation of developing ANWR (p. 28).*

Later, the WEFA Group asserts,

*Development and production in ANWR affects the economy in several different ways. Even if resources are shifted from other sectors of the economy to investment in ANWR, there will still be a net economic gain resulting from the higher productivity of those resources in investment in ANWR production than in other areas. Competitive markets for factors of production insure this result. If this were not the case, private industry would not be willing to invest in development since it would not be profitable (p. 35).*

It follows from this perspective that, in any hypothetical scenario in which ANWR is developed, such development is necessarily economically viable, and thus sufficient evidence of its own merit.

The results of the WEFA Group study, and to an extent the assumptions and perspectives embedded within it, are bolstered by its many mentions throughout the Arctic Power website. On the other hand, they are plainly rejected in the discourses of environmental and other anti-drilling groups. NRDC, in particular, describes the WEFA Group report as “implausible”, “misleading”, and containing “major flaws”<sup>101</sup>. In the excerpt below, which was last revised in November of 2001 but remains available on the NRDC website, the environmental lobby group chastises the WEFA Group for using “optimistic” projections of ANWR reserves in its analysis, and for basing its own economic projections on an inflated market price per barrel of oil.

*[WEFA] overstated the amount of economically recoverable oil in the refuge at 9.2 billion barrels, which it conceded was a "high case" scenario, [...and] based its economic projections on a price of nearly \$45 per barrel. The price of a barrel of oil, however, has been under \$20 for seven of the last 10 years, and is expected to be well below \$30 over the next decade. In fact, earlier this year, Alaska's Department of Revenue forecast a steady price drop to less than \$13 per barrel in 2009 to 2010 [...]*<sup>102</sup>

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<sup>101</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farcjobs.asp> on 2 August, 2013.

<sup>102</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farcjobs.asp> on 2 August, 2013.

The above critique is outdated in that it fails to acknowledge that the most recent 1998 USGS petroleum assessment has actually increased projections of ANWR reserves from those available at the time of the WEFA Group study, which would indicate that the “high case” scenario analyzed in the economic impact study is relatively less optimistic now than it was previously. NRDC has also neglected to update its reporting on the price per barrel of oil, which instead of dropping has risen to nearly 100 dollars<sup>103</sup> in recent years (EIA 2013c).

NRDC’s deepest criticism of the WEFA Group study pertains to its assumption that ANWR oil would increase the total global oil supply, and therefore significantly lower oil prices. The environmental lobby group explains,

*[The study] assumed that oil from the refuge would lower world oil prices by as much as \$3.60 a barrel, which would have a ripple effect on the U.S. economy, producing jobs in the petroleum, trucking, steel, shipping and manufacturing industries nationwide<sup>104</sup>.*

NRDC’s own assumption, in contrast, is that OPEC would respond to the introduction of ANWR oil into the global market by decreasing its own output, thereby moderating or even nullifying any potential impact to the market price of oil. Indeed, by the complex nature of the global oil market, this alternative assumption involves its own “ripple effect”, or as the WEFA Group similarly calls it, “multiplier effect” (p. 28), as in the studies by the Congressional Research Service and the Economic Policy Institute that are cited by NRDC.

The studies cited by NRDC, which enjoy their own features, employ their own methodologies, and rely on their own assumptions<sup>105</sup>, offer dramatically different results from those of the WEFA Group study, including projections of ANWR development job creation as low as 46,300 (Baker 2001), many of which would be temporary, low-wage, or diverted from existing jobs in other sectors (Gelb 2001, 1992; Goodstein 1994). Unlike the WEFA Group study, however, these latter

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<sup>103</sup> This refers to the yearly average price of oil. The monthly average has actually exceeded \$100 per barrel on a few occasions.

<sup>104</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farcjobs.asp> on 2 August, 2013.

<sup>105</sup> Less optimistic job projections than those offered by the WEFA Group are typically linked to assumptions that 1) foreign oil producers would responsively decrease their outputs more substantially than assumed by the WEFA Group, 2) the quantity of recoverable oil in ANWR is less than that estimated by the WEFA Group, and 3) the economy as a whole would be less affected by an oil price decline than projected by the WEFA Group. These variables are also multiplicative, rather than additive, when considered together.

studies are not mentioned at all by Arctic Power, and are not made readily available or referred to often by NRDC either, as the very idea of job creation attributable to ANWR development is generally downplayed or dismissed as irrelevant by the anti-drilling campaign. For this reason, such studies are not prominently featured in the discourse analysis presented here.

## **5.2 THE ARCTIC ENVIRONMENT: ASSESSING THE COSTS**

Just as Arctic Power and NRDC differently construct oil in the context of the ANWR drilling debate, so do they differently construct the natural environment. The latter's portrayal of the arctic, as the centerpiece of its campaign against drilling in ANWR, is two-fold. First of all, NRDC depicts the arctic environment as pristine, majestic, and intricately complex. The lobby group repeatedly uses words like "vibrant"<sup>106</sup>, "untouched"<sup>107</sup>, and "extraordinary"<sup>108</sup> to describe the terrain and inhabitants of the northern Alaskan region. It names ANWR in particular a "treasure"<sup>109</sup>, an "environmental jewel"<sup>110</sup> and an "American Serengeti"<sup>111</sup>, which "teems with staggering numbers of birds and animals"<sup>112</sup>, as detailed in the following.

*"The refuge is among the world's last true wildernesses, and it is one of the largest sanctuaries for Arctic animals. Traversed by a dozen rivers and framed by jagged peaks, this spectacular wilderness is a vital birthing ground for polar bears, grizzlies, Arctic wolves, caribou and the endangered shaggy musk ox, a mammoth-like survivor of the last Ice Age"<sup>113</sup>.*

NRDC further illustrates the arctic environment as an impressive ecological web of climates, creatures, and natural processes, but which requires a delicate balance of conditions in which its many interdependent components can thrive.

*"Every year, [a] vast herd of caribou travels hundreds of miles from Canada's Porcupine River region to the coastal plain, where females give birth in the spring. The plant growth on the plain at that time of year nourishes pregnant and nursing caribou, and cooling breezes along the*

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<sup>106</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic/9.html> on 7 August, 2013.

<sup>107</sup> Retrieved from <http://www.nrdc.org/energy/transportation/files/roadtorecovery.pdf> on 7 August, 2013.

<sup>108</sup> Retrieved from <http://www.nrdc.org/energy/transportation/files/roadtorecovery.pdf> on 7 August, 2013.

<sup>109</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 7 August, 2013.

<sup>110</sup> Retrieved from <http://www.savebiogems.org/stop-shell/> on 7 August, 2013.

<sup>111</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 7 August, 2013.

<sup>112</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 7 August, 2013.

<sup>113</sup> Retrieved from [http://docs.nrdc.org/legislation/files/leg\\_08112401a.pdf](http://docs.nrdc.org/legislation/files/leg_08112401a.pdf) on 7 August, 2013.

*coast help disperse insects that can drain more than a quart of blood a week from the calves and their parents. These unique conditions -- and the fact that there are fewer predators in the coastal plain -- offer newborn caribou a better chance of surviving their vulnerable first few weeks of life<sup>114</sup>.*

The environmental lobby group thus depicts ANWR not only as worthy of admiration, but also as fragile and in need of protection.

Simultaneously, and with increasing emphasis, NRDC also constructs the arctic environment as a symbol of political values and social movement. It describes, for example, that scientific research on the region “could be used to create an ecological baseline from which to assess further human-induced changes<sup>115</sup>”. In this way, NRDC depicts the arctic, which has seen relatively little human activity as compared to other parts of the globe, as a gauge against which the progress of industrial and technological developments can be measured, and the costs assessed. This notion has gained widespread momentum among environmentalists in recent years alongside increased public awareness of, and mounting concerns around, global climate change. The Arctic is a focal point within NRDC’s climate change discourse, and vice versa, because it contains the largest petroleum production site in the United States, yet is otherwise minimally developed, as well as because it has been hit harder than any other region by the consequences of climate change. I elaborate on this point below.

NRDC’s construction of the arctic environment, in the dual-sense described above, is conspicuously symbolic and idealistic. The group’s romantic illustrations, for example, are reminiscent of the preservationist discourses that emerged within the U.S. environmental movement of the nineteenth century in the way they assert nature’s aesthetic, spiritual, and intrinsic value (Nash 2001). At the same time though, the group’s portrayal of the arctic is grounded in concrete, material claims linking the region’s iconic significance to its physical attributes, and ANWR’s splendor to its usefulness and productivity. NRDC’s construction of the arctic is thus underpinned by the notion that environmental values translate into tangible outcomes, for example in the areas of water quality, food security, indigenous

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<sup>114</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp> on 7 August, 2013.

<sup>115</sup> Retrieved from <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf> on 24 September, 2013.

subsistence, and public health. In this way, it also reflects the influence of the more recent environmental justice movement, which shifts environmental discourses away from the largely recreational and 're-creational' (Brulle 2000, p. 163, Thoreau 1858) interests that resonate primarily with white, middle- and upper-class communities, and towards the more material environmental concerns of poor and minority groups.

Above all, the portrayal of the arctic environment offered by NRDC affirms the lobby group's alignment with reform environmentalism as the dominant paradigm within the contemporary mainstream environmental movement, which "animates action to identify and eliminate the physical causes of environmental degradation" (Brulle 2000, p. 173). As such, it draws heavily on the natural sciences, and on an ecological understanding of human civilization that links the fate of our species to the health of the planet. Accordingly, NRDC upholds the arctic environment as "a bellwether for the world"<sup>116</sup>, a source of hope for future generations, and also a reminder of the consequence of human action or inaction.

In stark juxtaposition to NRDC's alluring and romantic portrayal of ANWR, Arctic Power depicts the Refuge as a frozen, harsh, and unattractive "wasteland"<sup>117</sup>, which is "practically void of life"<sup>118</sup>. A handout produced by the oil lobby group, entitled "Which one is the Real ANWR?"<sup>119</sup>, mocks environmentalists' accounts of "majestic mountains" and "sweeping panoramas" within ANWR, claiming that actually the "facts aren't as pretty or as emotionally appealing". Arctic Power further contends that the area proposed for development is neither pristine nor unique.

*On the coastal plain, the Arctic winter lasts for 9 months. It is dark continuously for 56 days in midwinter. Temperatures with the wind chill can reach -110 degrees F. It's not pristine. There are villages, roads, houses, schools, and military installations. It's not a unique Arctic ecosystem. The coastal plain is only a small fraction of the 88,000 square miles that make up the North Slope. The same tundra*

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<sup>116</sup> Retrieved from <http://www.onearth.org/article/can-we-save-the-melting-arctic-before-its-too-late-yes-we-can> on 7 August, 2013.

<sup>117</sup> Retrieved from <http://www.anwr.org/Background/Weather-and-Climate-Conditions.php> on 7 August, 2013.

<sup>118</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/What-is-ANWR-and-where-is-it.php> on 7 August, 2013.

<sup>119</sup> Retrieved from <http://www.anwr.org/features/pdfs/realanwr-page1.pdf> on 7 August, 2013. Underline retained from original.

*environment and wildlife can be found throughout the circumpolar Arctic regions. The 1002 Area is flat. That's why they call it a plain<sup>120</sup>.*

As such, the oil lobby group portrays the arctic environment as praiseworthy for little other than the potential energy it might provide.

### **5.2.1 The Threat of Development**

NRDC describes the expansion of petroleum development into ANWR as a dire threat to the natural environment of the North Slope. Further to the group's dual construction of the arctic, however, as a precious but vulnerable ecosystem as well as a measure for the progress of human civilization, there are similarly two parts to the group's argument about the destructive impacts of development. The first part addresses the environmental costs associated with oil drilling operations, which are therefore most concentrated at the site of production and decreasingly so with distance. The second part pertains to climate change as a form of global ecological degradation that is overwhelmingly attributed to the burning of fossil fuels, and therefore chiefly attributed to the consumption of oil, subsequent to its production.

The local and global impacts of oil drilling on the North Slope, like the production and consumption of fossil fuels, are thoroughly entwined. For example, polar bears that inhabit the ANWR region are seen by environmentalists as in need of protection from industrial activities because they are an important means of local identity and subsistence for many indigenous Alaskans. At the same time, they are the focus of an international "Save the Bears" campaign<sup>121</sup> because the species as a whole has been threatened by global warming and the melting of arctic sea ice on which it depends for hunting and travel. Each of these concerns about the polar bear's situation intensifies the other. Below I discuss NRDC's assessment of the independent as well as combined local and global impacts of drilling in ANWR.

NRDC claims that energy development on the North Slope has "exploited<sup>122</sup>", "littered<sup>123</sup>", "scarred<sup>124</sup>", and "destroyed<sup>125</sup>" ANWR's neighboring and "once-pristine<sup>126</sup>" lands. The group warns,

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<sup>120</sup> Retrieved from <http://www.anwr.org/features/pdfs/realanwr-page1.pdf> on 7 August, 2013.

<sup>121</sup> Retrieved from <http://www.savebiogems.org/polar-bear-sos/> on 7 August, 2013.

<sup>122</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 7 August, 2013.

<sup>123</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic/9.html> on 7 August, 2013.

*For a sense of what Big Oil's heavy machinery would do to the refuge, just look 60 miles west to Prudhoe Bay -- a gargantuan oil complex that has turned 1,000 square miles of fragile tundra into a sprawling industrial zone [...]. The result is a landscape defaced by mountains of sewage sludge, scrap metal, garbage and more than 60 contaminated waste sites that contain -- and often leak -- acids, lead, pesticides, solvents and diesel fuel<sup>127</sup>.*

NRDC also reiterates the vulnerability of the region in explaining that “in the Arctic, the environmental damage from oil spills is more severe and lasts longer than in more temperate climates,” and that, “even after decades have passed, tundra vegetation has been unable to recover from diesel spills<sup>128</sup>”.

The environmental lobby group points to a range of ecological, biological, and social investigations into the environmental impacts of drilling in ANWR to back up its associations between development and destruction. Such evidence is heavily drawn from comprehensive scientific assessments (notably National Research Council 2003, Nellemann and Cameron 1998, and Walker et al. 1987) that cover a range of “cross-cutting issues<sup>129</sup>” and analyze “patterns of [...] environmental perturbations or their effects over large areas and long periods” (National Research Council 2003, p.2). In other words, they address the cumulative impacts of development across space and time, in addition to the direct and immediate consequences of isolated activities. These studies frequently draw attention to uncertainties, risks, and knowledge gaps, which NRDC cites as reasons for potential developers and licensing agencies to exercise restraint, particularly given that the fragile arctic environment leaves “almost no margin for error<sup>130</sup>”.

The local and regional environmental impacts of oil operations referred to most often by NRDC fall into several categories. One of these is the introduction of roads, drilling pads, and other infrastructure onto the arctic landscape, and with it the

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<sup>124</sup> Retrieved from <http://www.nrdc.org/media/pressReleases/010801b.asp> on 7 August, 2013.

<sup>125</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.asp> on 7 August, 2013.

<sup>126</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.asp> on 7 August, 2013.

<sup>127</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 7 August, 2013.

<sup>128</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.asp> 7 August, 2013.

<sup>129</sup> Retrieved from [http://docs.nrdc.org/legislation/files/leg\\_08112401a.pdf](http://docs.nrdc.org/legislation/files/leg_08112401a.pdf) 7 August, 2013.

<sup>130</sup> Retrieved from <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf> (p. 2) on 8 August, 2013.

extraction of gravel from riverbeds for use in such construction, which for example, “has destroyed fish spawning and feeding areas, due to siltation and elimination of habitat<sup>131</sup>” (National Research Council 2003)<sup>132</sup>. Other environmental impacts result from the potential malfunctioning or breakdown of industry equipment, which leads to pipeline leaks, oil and toxic chemical spills, and even explosions like the Deepwater Horizon incident that occurred in the Gulf of Mexico in 2010 (EVOSTC 2010, Miller 2009, National Research Council 2003)<sup>133</sup>.

An additional set of environmental hazards identified by NRDC are posed by sea-bound carrying vessels, which transport unrefined oil from Alaska to the contiguous U.S. for processing, and which have been linked to increased bowhead whale mortality rates (BOEM 2012, Holland-Bartels and Pierce 2011, Waring et al. 2006)<sup>134</sup>. This is due to direct collisions with the animals, as well as the fact that engine noise can “disturb marine species and mask the sounds that they need to hear in order to be successful in foraging, reproducing, and avoiding predators<sup>135</sup>”. NRDC further describes that, even under optimal conditions, oil operations are responsible for the release of methane, black carbon, carbon dioxide, sulfur oxide, mono-nitrogen oxides, and other harmful gases into the atmosphere (Arctic Council 2009, Brooks et al. 1997, Jaffe et al. 1995)<sup>136</sup>; for imposing cultural, dietary, and economic adaptations or restrictions on the lifestyles and livelihoods of Alaskan indigenous groups (BOEM 2012, BOEMRE 2011, USFWS & MMS 2009)<sup>137</sup>, and for causing a myriad of other disturbances to resident and migratory, marine, avian, and terrestrial wildlife (Moore and Huntington 2008, Suydam et al. 2000)<sup>138</sup>.

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<sup>131</sup> Retrieved from <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf> (p. 3) on 8 August, 2013.

<sup>132</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.

<sup>133</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.

<sup>134</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.

<sup>135</sup> Retrieved from <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf> (p. 2) on 8 August, 2013.

<sup>136</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.

<sup>137</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.

<sup>138</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.



Beyond the environmental impacts that NRDC attributes to oil production, the lobby group connects the ANWR drilling debate to global climate change, and thus to a range of large-scale environmental impacts and alterations associated with petroleum consumption. The group describes that, “North Slope oil facilities [...] release greenhouse gases, which are a major contributor to global climate change,” and that such emissions “climb even higher as North Slope oil is transported by tanker, refined, and eventually burned in engines or power plants<sup>139</sup>”. More broadly, NRDC explains that the United States is responsible for 25 percent of the world’s carbon dioxide pollution as a result of burning fossil fuels, and therefore that “America ought to take a leadership role in solving the problem<sup>140</sup>”.

Other symptoms of climate change that NRDC directly associates with fossil fuel consumption include higher average global temperatures; extreme weather events; increased public health risks and transmittable diseases; rising sea levels; water shortages; threatened ecosystems, habitats, and wildlife species; and in connection with all of the above, disruptions to the nation’s agriculture, energy, and transportation systems<sup>141</sup> (Hopcroft et al. 2008, Laidre et al. 2008, Moore and Huntington 2008, Grebmeier and Dunton 2000)<sup>142</sup>. These and other impacts reported by NRDC are drawn from a range of scientific literature, most notably from the United Nations’ Intergovernmental Panel on Climate Change (IPCC), the U.S. National Oceanic and Atmospheric Administration (NOAA), and the U.S. Global Change Research Program, which includes the Department of Defense, the National Aeronautics and Space Administration (NASA), the National Science Foundation and other government agencies.

In sum, NRDC explains that,

*[C]limate change is a complex phenomenon, and its full-scale impacts are hard to predict far in advance. But each year scientists learn more about how climate change is affecting the planet and our communities,*

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<sup>139</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.asp> on 8 August, 2013.

<sup>140</sup> Retrieved from <http://www.nrdc.org/globalwarming/f101.asp> on 8 August, 2013.

<sup>141</sup> As described in <http://www.nrdc.org/globalwarming/f101.asp>, <http://www.nrdc.org/globalwarming/fcons.asp>, <http://www.nrdc.org/health/climate/default.asp>, <http://www.nrdc.org/reference/topics/global.asp>, <http://www.nrdc.org/globalwarming/qthinice.asp>, and <http://www.nrdc.org/globalwarming/science/>.

<sup>142</sup> Cited in <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf>, retrieved 8 August, 2013.

*and most agree that certain consequences are likely to occur if current trends continue*<sup>143</sup>.

This overview explicitly links local environmental processes, practices, and policies to their global material and societal implications. It is also broadly representative of NRDC's position in the ANWR drilling debate. As the environmental lobby group's President and CEO affirms, we must work "to reduce the carbon pollution that is causing the Arctic to warm" [...] "for what happens in the Arctic has grave consequences for all of us"<sup>144</sup>. These excerpts sit at the intersection between reform environmentalist discourse and climate change discourse, which is rapidly expanding as local and regional environmental issues are increasingly aggregated by national and international organizations under the umbrella of global climate change.

### 5.2.2 Successful Co-existence

Arctic Power's response to climate change warnings by environmentalists is dismissive, and in some cases, characterized by active denial. For example, throughout its website, the phrase "global warming" is enclosed in inverted commas<sup>145</sup>, or referred to as a "view"<sup>146</sup>, suggesting that global warming is an alleged or imaginary phenomenon, rather than a known and real occurrence. It is also described as a "bogus"<sup>147</sup> concept by one of Arctic Power's expert guest writers. The oil lobby group further argues that,

*the science within the discussion on global warming is highly controversial and often uses speculative and relative future projections from climate models to come to its conclusions*<sup>148</sup>

The notion that climate change science "is inaccurate and highly speculative, if not out right unprovable"<sup>149</sup> is echoed throughout Arctic Power's website. Moreover, the

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<sup>143</sup> Retrieved from <http://www.nrdc.org/globalwarming/f101.asp> on 8 August, 2013.

<sup>144</sup> Retrieved from <http://www.onearth.org/article/can-we-save-the-melting-arctic-before-its-too-late-yes-we-can> on 8 August, 2013.

<sup>145</sup> Retrieved from <http://www.anwr.org/Politics/Murkowski-offers-ANWR/OCS-to-Cap-Trade-Bill.php> on 8 August, 2013.

<sup>146</sup> Retrieved from <http://www.anwr.org/Politics/Seventh-ANWR-Bill-Rolls-into-House.php> on 8 August, 2013.

<sup>147</sup> Retrieved from <http://www.anwr.org/Politics/Alan-Caruba-Reviews-Recent-Insights-into-Peak-Oil.php> on 8 August, 2013.

<sup>148</sup> Retrieved from <http://www.anwr.org/Latest-News/Polar-Bear-Listing-to-Affect-ANWR-and-Alaskan-Arctic.php> on 8 August, 2013.

group claims that, even if climate change could be sufficiently substantiated, the consequences of attempting to counteract it are more certain, and would be more devastating, than climate change itself, as explained in the following.

*current trends to limit certain energy production in an attempt to tackle the anthropogenic global warming view would directly lead to higher energy costs for consumers and restrictions on available transport*<sup>150</sup>

*in addition, other countries, such as China and India, have indicated they have no intention of adopting such a plan reducing any possible effectiveness and placing our country at a competitive disadvantage*<sup>151</sup>

Arctic Power's discourse thus minimizes the hazards associated with climate change while highlighting the challenges associated with addressing climate change, thus extinguishing any need for further discussion on the topic.

Another feature of the oil lobby group's climate change discourse is that it invokes a them-us dichotomy, which casts environmentalists as extreme and out of touch, while portraying oil producers and consumers together, in other words all of "us", as the undeserving targets of their radical agenda. One way Arctic Power does this is by proclaiming that NRDC, which is named specifically<sup>152</sup>, and other environmental groups aim to prohibit all activities currently associated with greenhouse gas emissions, regardless of the havoc it would wreak in the lives of average citizens. This argument is articulated below.

*Environmental groups claim oil companies and oil production provide the source for much CO2 and thus should be stopped as this, they claim, melts sea ice and kills polar bears. Under this rationale the production of methane and the burning of coal in power plants also would have the same effect and thus should be curtailed or stopped. How far the law goes down to the consumer driving a car and emitting CO2 and other green house gases thus melting ice and killing bears is uncertain*<sup>153</sup>.

And to reiterate the point,

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<sup>149</sup> Retrieved from <http://www.anwr.org/Latest-News/C.O.R.E-Rallies-for-ANWR.php> on 30 June, 2013.

<sup>150</sup> Retrieved from <http://www.anwr.org/Politics/Seventh-ANWR-Bill-Rolls-into-House.php> on 30 August, 2013.

<sup>151</sup> Retrieved from <http://www.anwr.org/images/pdf/GlobalWarminghr2539.pdf>, linked from <http://www.anwr.org/Politics/Seventh-ANWR-Bill-Rolls-into-House.php> on 8 August, 2013.

<sup>152</sup> Retrieved from <http://www.anwr.org/Politics/Polar-Bears-Are-Now-Political-Animals.php> and [predictable proponents] on 27 June, 2013.

<sup>153</sup> Retrieved from <http://www.anwr.org/Latest-News/Alaskan-Groups-Sue-over-Polar-Bears-Barrow.php> on 8 August, 2013.

*This could mean that driving a car and thus creating greenhouse gases could be directly linked to killing polar bear [sic]<sup>154</sup>*

Such claims pit environmentalists and their apparently fringe concerns about climate change against consumers of oil, which virtually all participants in modern-day society understand ourselves to be. Therefore, on the basis that environmental concerns are marginal rather than mainstream, and given the crucial role that oil currently plays in supporting our collective way of life, Arctic Power further renders climate change a non-factor in the ANWR drilling debate.

Setting aside the issue of climate change, Arctic Power's devaluation of the arctic region, as described above, serves to trivialize environmentalists' grievances about the impacts of drilling to the local arctic environment. The oil lobby group also directly dismisses environmental concerns as "unfounded<sup>155</sup>", arguing, for instance, that oil spills contained at the site of production "shouldn't be blown out of proportion<sup>156</sup>", that "drilling activity in ANWR would be limited to winter months when wildlife does not frequent the coastal plain<sup>157</sup>", and anyway that "there is not one species of animal from either the North Slope or the ANWR coastal plain that is listed as endangered<sup>158</sup>".

Arctic Power emphatically rejects NRDC's holistic approach to the valuation and management of the arctic environment. Nevertheless, the oil lobby group concedes that certain of the ANWR region's natural resources, such as its iconic and widely admired wildlife species, warrant appreciation and protection. It also affirms that energy development must be environmentally responsible, not least because

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<sup>154</sup> Retrieved from <http://www.anwr.org/Latest-News/C.O.R.E-Rallies-for-ANWR.php> on 8 August, 2013.

<sup>155</sup> Retrieved from <http://www.anwr.org/features/issues/wildlife-protect.htm> on 8 August, 2013.

<sup>156</sup> Retrieved from <http://www.anwr.org/Headlines/There-is-a-Job-that-Needs-to-be-Done-That-we-Expect-to-be-Done.php> on 8 August, 2013.

<sup>157</sup> Retrieved from <http://www.anwr.org/case.htm> on 8 August, 2013.

<sup>158</sup> Cited in <http://www.anwr.org/features/issues/wildlife-protect.htm>, retrieved 8 August, 2013. I note here that, according to the United States Fish and Wildlife Service, which is responsible for managing both The List of Endangered and Threatened Wildlife and the Refuge itself, a total of ten species that inhabit ANWR are listed as either 'endangered' or 'threatened'. These include the Bowhead Whale, endangered since 1970; the Eskimo Curlew, endangered since 1967; the Finback Whale, endangered since 1970; the Humpback Whale, endangered since 1970; the Leatherback Sea Turtle, endangered since 1970; the Polar Bear, threatened since 2008; the Spectacled Eider, threatened since 1993; the Sperm Whale, endangered since 1970; the Steller Sea-lion, threatened since 1990; and the Steller's Eider, threatened since 1997 (Code of Federal Regulations 2013).

environmental considerations are inextricably linked to the viability of the oil industry itself<sup>159</sup>. As one example of this, Arctic Power highlights the advancement of minimal-impact drilling technologies, which aim to reduce the footprint of future petroleum production operations in the arctic, along with the fact that U.S. oil is produced “under the world’s strictest environmental standards<sup>160</sup>”. Along these lines, two issues in particular feature prominently throughout Arctic Power’s environmental discourse. These pertain to the “flourishing<sup>161</sup>” caribou herds that inhabit already developed areas along Alaska’s North Slope, and the “reduced footprint<sup>162</sup>” of modern-day arctic drilling. I discuss these two issues in turn below.

Arctic Power provides a glowing assessment of the rapport between energy development in the arctic and the natural environment that surrounds it. As such, the group’s counter-argument regarding drilling-nature relations balances on a distinction between the environment at large, and the particular natural resources, goods, and services it provides. An example of this distinction is revealed in the excerpt below, which invokes harassment, plague, and molestation to describe the hardship suffered by the caribou during their annual migration. Specifically, through an “inversion of terms” (Livesey 2002, p.129), Arctic Power co-opts the language of environmentalists around protecting wildlife from development, and argues that in fact wildlife are in need of protection from the environment.

*The tundra provides a perfect environment for mosquitoes and other insects who emerge in late June and July to continually harass the caribou. By mid-to-late July, most Porcupine Caribou have moved off the Coastal Plain and dispersed in the foothills, only to be plagued by two other insect pests; the warble fly and the nose bot fly. The warble fly [...] lays its eggs in the fur and the legs or abdomen of the caribou. The larvae soon hatch, burrow under the skin, and travel to the back. Here they encapsulate and cut a breathing hole in the skin. [...] The nose bot bears live larvae, which it deposits in the nostrils of the caribou. The bot larvae move through the nasal passages and settle down at the entrance to the throat. By spring the larvae have grown so much that*

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<sup>159</sup> Retrieved from <http://www.anwr.org/Headlines/There-is-a-Job-that-Needs-to-be-Done-That-we-Expect-to-be-Done.php> on 8 August, 2013.

<sup>160</sup> Retrieved from <http://www.anwr.org/OCS/Worried-About-Fuel-Prices-ANWR-Equals-30-Years-of-Saudi-Oil.php> on 8 August, 2013.

<sup>161</sup> Retrieved from <http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php> on 8 August, 2013.

<sup>162</sup> Retrieved from <http://www.anwr.org/Headlines/Arctic-Power-Supports-1002-Coastal-Plain-Announcement.php>, <http://www.anwr.org/Technology/Today-s-drilling-leaves-a-small-footprint.php>, <http://www.anwr.org/techno/techno.htm>, and <http://www.anwr.org/Background/Making-the-Case-for-ANWR.php> on 8 August, 2013.

*they may form a mass large enough to actually interfere with breathing. [...] During July and early August, caribou can be seen violently shaking their heads, stamping their feet, and racing wildly over the tundra [...] to evade warble or bot flies*<sup>163</sup>.

In asserting that the “greatest threat to the herd is their harsh natural habitat<sup>164</sup>”, as opposed to development, Arctic Power maintains that the relationship between wildlife and industry is uncompetitive, and further suggests that it may even be reciprocal. As such, Arctic Power counters NRDC’s ‘threat of development’ narrative with one of ‘successful co-existence’.

The argument that “development and wildlife are successfully coexisting<sup>165</sup>” is bolstered by the fact that, since Prudhoe Bay drilling operations began within the preferred habitat of the Central Arctic caribou herd in 1977, their numbers have risen substantially. As the following excerpt demonstrates, Arctic Power carefully notes periods of overlap between herd increases and development, though it attributes herd decreases to factors unrelated to industry activity.

*The Central Arctic Herd [...] increased during the 1970s and 1980s from 6,000 in 1978 to 23,400 in 1982. Rapid growth stopped in the late 1980s, however, and the herd now appears stable at around 32,000 animals. Relatively low calf production and survival in recent years may result from severe winter weather which has also depleted moose and Dall sheep populations in the central arctic area. It is also possible that the Central Arctic Herd is approaching range carrying capacity*<sup>166</sup>.

Arctic Power doesn’t explicitly credit oil development for the herd increase, but it does broadly characterize industry as beneficial to the caribou, noting,

*it is interesting that while populations have been rising in the Central Arctic Herd which use lands in the North Slope oilfields, populations have been declining in the Porcupine herd which do not use lands where there is oil and gas development*<sup>167</sup>

Further to this observation, the oil lobby group points to evidence that caribou have actively taken advantage of development.

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<sup>163</sup> Retrieved from <http://www.anwr.org/Background/Caribou-in-the-Region.php> on 8 August, 2013.

<sup>164</sup> Retrieved from [http://www.anwr.org/images/pdf/2011\\_PowerPt\\_on\\_ANWR.pdf](http://www.anwr.org/images/pdf/2011_PowerPt_on_ANWR.pdf) on 8 August, 2013.

<sup>165</sup> Retrieved from <http://www.anwr.org/Background/Making-the-Case-for-ANWR.php> on 8 August, 2013.

<sup>166</sup> Retrieved from <http://www.anwr.org/Background/Caribou-in-the-Region.php> on 8 August, 2013.

<sup>167</sup> Retrieved from <http://www.anwr.org/features/pdfs/caribou-facts.pdf> on 8 August, 2013.

Dr. Matthew Cronin, a researcher at the University of Fairbanks—Alaska, is referred to by Arctic Power as “one of the foremost experts of Alaskan caribou<sup>168</sup>”, and is heavily relied upon by the lobby group for expert testimony supporting an amicable relationship between industry and wildlife. He and his colleagues argue that numerous benefits are afforded to the caribou by development, such as “use of oil field roads and structures for travel” and “to escape from insects” (Cronin 2004)<sup>169</sup>. Cronin also explains that “caribou in the oil field areas frequently have had higher calf-cow ratios than in undeveloped areas,” suggesting that industry operations have enabled improved reproductive rates, though causation between the two is never drawn. The correlation is strongly emphasized, however, and legitimized in the reprise that “these findings have been published in scientific journals<sup>170</sup>”.

Related to the argument that industry is a friend rather than foe to wildlife, Arctic Power is emphatic that environmental regulations in the U.S. are already sufficiently rigorous and extensive<sup>171</sup>. The lobby group stresses that “foreign oil is produced and shipped under less strict environmental standards than domestic oil,” and further that “Alaska’s oil fields are the cleanest in the world, second to none<sup>172</sup>”. Arctic Power describes that the U.S. House of Representatives has proposed restricting the total surface area of production and support facilities associated with ANWR development to a maximum of 2,000 acres, which the oil industry affirms its advanced technologies would be able to accommodate<sup>173</sup>. In particular, the oil lobby group emphasizes that,

*current legislation allows only allows [sic] 2,000 acres of the 10-02 Area [sic] can be used for surface structures. That’s less than half of 1% of ANWR’s total area [sic] can be impacted by an oil field<sup>174</sup>*

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<sup>168</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 8 August, 2013.

<sup>169</sup> Reprinted in <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf>, retrieved 8 August, 2013.

<sup>170</sup> Reprinted in <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf>, retrieved 8 August, 2013.

<sup>171</sup> As NRDC and others point out, however, the oil industry has an extended history of noncompliance with environmental and safety regulations, and have paid hundreds of millions of dollars in criminal fines as well as civil penalties (Gore 2009; Miller 2009).

<sup>172</sup> Retrieved from <http://www.anwr.org/case.htm> on 8 August, 2013.

<sup>173</sup> Retrieved from <http://www.anwr.org/Technology/Today-s-drilling-leaves-a-small-footprint.php> on 8 August, 2013.

<sup>174</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 8 August, 2013.

This argument is restated across multiple distribution materials by Arctic Power, for example in a handout that depicts a map of Alaska with an almost imperceptible dot marked on the Coastal Plain to indicate the size of a 2,000-acre plot in relation to the total area of the Refuge (see Figure 5-2). A red arrow pointing toward that dot is accompanied by the caption, “See the Point?”<sup>175</sup>.

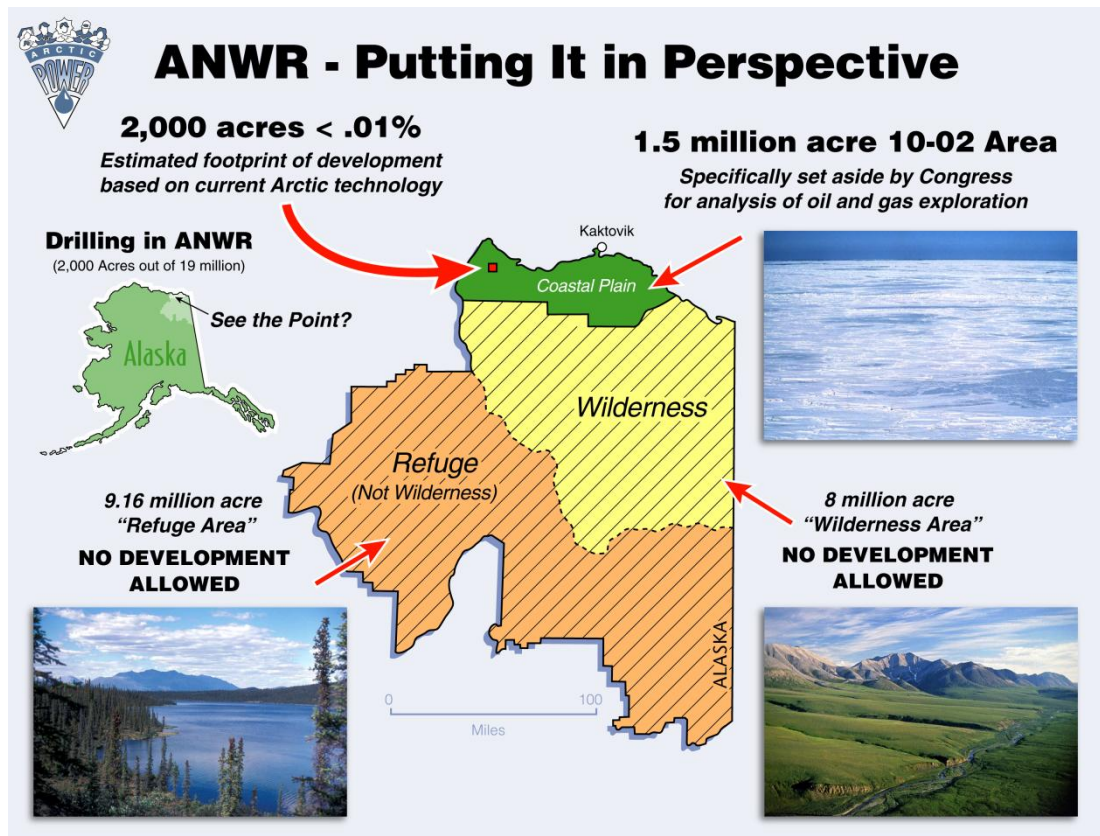


Figure 5-2: “Putting It in Perspective”<sup>176</sup>

Arctic Power further describes oil developers as “innovators” and “pioneers”<sup>177</sup>, remarking that the industry’s surface footprint<sup>178</sup> has diminished significantly since drilling began on the North Slope. Significantly though, the group’s references to the

<sup>175</sup> Retrieved from <http://www.anwr.org/images/pdf/63008ANWRperspectivemap.pdf> on 8 August, 2013.

<sup>176</sup> Retrieved from <http://www.anwr.org/images/pdf/63008ANWRperspectivemap.pdf> on 8 August, 2013.

<sup>177</sup> Retrieved from <http://www.anwr.org/Technology/Drilling-Technology-and-Innovations-Continue.php> on 8 August, 2013.

<sup>178</sup> Retrieved from <http://www.anwr.org/Technology/Today-s-drilling-leaves-a-small-footprint.php> on 9 August, 2013.



arctic oil industry's "minimal environmental footprint"<sup>179</sup> are somewhat ironic, given the layered meanings of this phrase, which is also sometimes enclosed in inverted commas on the oil lobby group's website<sup>180</sup>.

Namely, the word 'footprint' is used by Arctic Power in an environmental context, to refer to the physical surface area of the land that would lie beneath infrastructure associated with development, such as access roads or drilling pads, within the proposed ANWR oil field complex. However, the notion of an "ecological footprint" is much more widely associated with warnings by environmentalists, often directed at the developed world, that the earth is approaching its carrying capacity (Wackernagel 1996, Rees 1992).

In the latter usage, the word 'footprint' refers metaphorically to the environmental impact of a particular city's, business', family's, or individual's energy and resource consumption behaviors. Similar narratives, for example around the "carbon footprints" of various CO<sub>2</sub>-emitting industries or even nations, have also become increasingly commonplace (UNFCCC 2013, Hammond 2007). Here, however, Arctic Power has co-opted the term 'footprint' used by environmentalists to criticize ecologically-intensive practices like fossil fuel development, and reinvented it in a narrower, more literal, and optimistic sense (for elaboration on and comparable examples of 'discourse co-optation', see Jensen 2012).

Several pages on the lobby group's website are dedicated to lengthy, vivid, and highly technical explanations of relatively recent advances in arctic drilling technology. They discuss, for example, "extended-reach", "directional", and "through-tube rotary" drilling techniques, which are utilized in conjunction with "multilateral", "designer", and "horizontal production" wells. They also point to the industry's use of "coiled tubing units" for well completion and maintenance, its construction of temporary ice roads and drilling pads, and its ability to dispose of drilling fluid and mud waste, known as 'cuttings', by injecting them back down into below-ground reserve pits<sup>181</sup>. Arctic Power links all of these innovations and

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<sup>179</sup> Retrieved from <http://www.anwr.org/Latest-News/Committee-Passes-Bill-to-Open-3-of-ANWR.php> on 9 August, 2013.

<sup>180</sup> Retrieved from <http://www.anwr.org/Background/Making-the-Case-for-ANWR.php> on 9 August, 2013.

<sup>181</sup> Multiple pages are linked from <http://www.anwr.org/Technology/>, retrieved 8 August, 2013.

advanced practices to environmental responsibility<sup>182</sup>, as well as to the oil industry's commitment to the health and safety of its workers<sup>183</sup>.

A further point of emphasis in Arctic Power's presentation of the technological advances in arctic drilling, which is repeated on numerous occasions, is that they have served as substantial cost-cutting measures for the industry. The oil lobby group describes that,

*All of these new techniques have enabled oil and gas producers to develop new oil reserves on the North Slope for less than \$2.50 a barrel. By lowering the finding costs of new oil, North Slope producers have been able to compensate for other costs [...]. It also has allowed more drilling to be done on the Slope since drilling and well completion is less expensive<sup>184</sup>.*

As indicated here, Arctic Power does not claim that the oil industry's decision-making process is significantly motivated or even influenced by environmental concerns. Rather, it maintains that the industry's profit-driven agenda is thoroughly compatible with a robust natural environment.

### **5.3 BACK AND FORTH, AND BACK AGAIN**

NRDC devotes minimal attention to advances in arctic drilling technology, but it does take issue with Arctic Power's claim that ANWR development would likely be limited to an area of 2,000 acres. The environmental lobby group warns that the aforementioned legislation proposed by the U.S. House of Representatives, which would limit the surface area of drilling operations to 2,000 acres, is wide open to interpretation, namely on two points. Firstly, NRDC describes, in the following excerpt, that the legislation does not stipulate that the designated 2,000 acres would be contiguous.

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<sup>182</sup> Retrieved from [http://www.anwr.org/archives/bp\\_proposes\\_development\\_with\\_no\\_pad\\_flexible\\_pipeline.php](http://www.anwr.org/archives/bp_proposes_development_with_no_pad_flexible_pipeline.php), [http://www.anwr.org/archives/new\\_standard\\_set\\_with\\_doublehulled\\_doublescrew\\_tankers\\_.php](http://www.anwr.org/archives/new_standard_set_with_doublehulled_doublescrew_tankers_.php), [http://www.anwr.org/archives/ship\\_escortresponse\\_vessel\\_system\\_serve\\_.php](http://www.anwr.org/archives/ship_escortresponse_vessel_system_serve_.php), [http://www.anwr.org/archives/small\\_footprint.php](http://www.anwr.org/archives/small_footprint.php), and [http://www.anwr.org/archives/the\\_value\\_of\\_3d\\_seismic\\_.php](http://www.anwr.org/archives/the_value_of_3d_seismic_.php) on 24 September, 2013.

<sup>183</sup> Retrieved from [http://www.anwr.org/archives/new\\_standard\\_set\\_with\\_doublehulled\\_doublescrew\\_tankers\\_.php](http://www.anwr.org/archives/new_standard_set_with_doublehulled_doublescrew_tankers_.php) on 24 September, 2013.

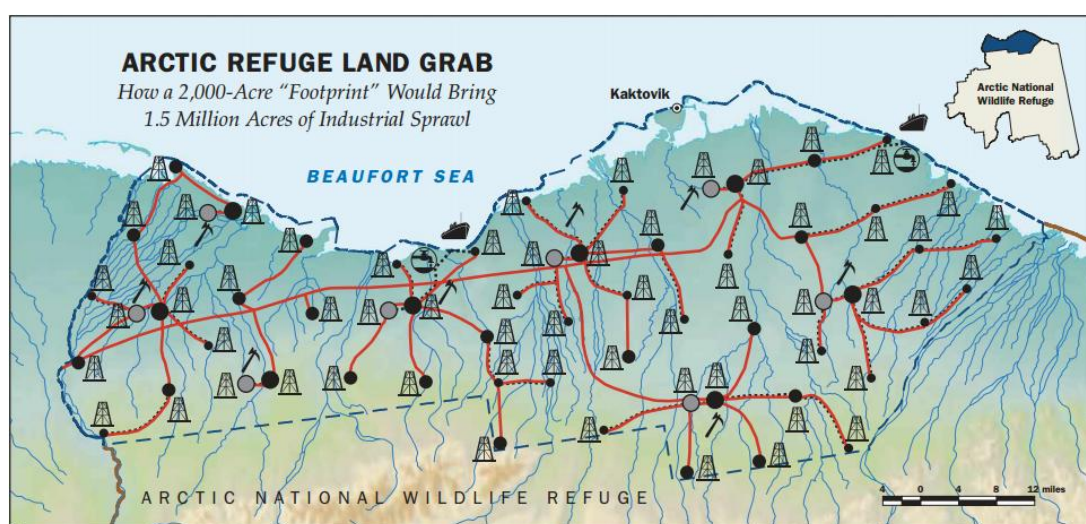
<sup>184</sup> Retrieved from <http://www.anwr.org/Technology/Drilling-Technology-and-Innovations-Continue.php> on 8 August, 2013.

*The so-called 2,000-acre limitation would not have required that the 2,000 acres of production and support facilities be in one compact, contiguous area. As with the North Slope oil fields west of the Arctic Refuge, development could be spread over a very large area<sup>185</sup>.*

NRDC reiterates that,

*oil in the refuge is not concentrated in one large reservoir within a 2,000-acre area but is spread across its 1.5-million-acre coastal plain in more than 30 small deposits, according to the U.S. Geological Survey<sup>186</sup>*

On this basis, the environmental lobby group speculates that the supporting infrastructure required by petroleum development would equate to “industrial sprawl” across the entire 1.5 million acres of ANWR’s Coastal Plain. This scenario has been mapped out and made available from the NRDC website in a document entitled, “Arctic Refuge Land Grab” (Figure 5-3).



**Figure 5-3: “Arctic Refuge Land Grab”<sup>187</sup>**

Secondly, NRDC points out that the proposed 2,000-acre limit pertains only to “surface acreage” (H.R.6 2003, H.R.4 2001), which could be narrowly interpreted as

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<sup>185</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farc2000.asp> on 8 August, 2013.

<sup>186</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farc2000.asp> on 8 August, 2013.

<sup>187</sup> Retrieved from [http://www.nrdc.org/land/wilderness/arcticmap\\_2000acres.pdf](http://www.nrdc.org/land/wilderness/arcticmap_2000acres.pdf) on 9 August, 2013.

merely “the area where oil facilities actually touch the ground”<sup>188</sup>. As such, according to NRDC, this restriction would not apply to gravel mines, roads, or building foundations; to land excavated for burying pipelines, or to seismic and other exploration activities, which typically require convoys of bulldozers and other heavy machinery. Overall, the environmental lobby group argues that the cumulative environmental impact of ANWR development would extend well beyond the physical footprint of its oil field, as it does in the case of existing North Slope development.

NRDC cites a 1989 study published in the journal *Science* (Walker et al. 1987)<sup>189</sup> as corroborative evidence of the above argument. The lobby group also describes that,

*More recently, biologists found that decreased caribou calving within a 2.5-mile zone of pipelines and roads show that the “extent of avoidance greatly exceeds the physical ‘footprint’ of an oil-field complex” (Nellemann and Cameron 1998)<sup>190</sup>*

Along these lines, NRDC rejects another of the above claims by Arctic Power, which is that increases in the Central Arctic caribou herd population can be attributed to industry activity. In the following, for example, the environmental lobby group refers to altered calving patterns and herd movement away from oil fields as more significant indicators of caribou response to development. NRDC describes,

*Advocates of oil development point to the Central Arctic herd, which inhabits the Prudhoe Bay area, as evidence that oil and wildlife can coexist. But Alaska’s Department of Fish and Game reports that pregnant caribou have dramatically shifted away from the oil fields, calving instead where there are no industrial disturbances. Studies also show that as roads and pipelines grew closer together in the Central Arctic’s Kuparuk oilfields, concentrated calving disappeared from this area and shifted to the south<sup>191</sup>.*

In fact, multiple studies by the Alaska Department of Fish and Game reiterate the above arguments<sup>192</sup>. One in particular, entitled “Redistribution of Calving Caribou in Response to Oil Field Development on the Arctic Slope of Alaska” (Cameron et al.

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<sup>188</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farc2000.asp> on 8 August, 2013.

<sup>189</sup> Cited in <http://www.nrdc.org/land/wilderness/artech/farc2000.asp>, retrieved 8 August, 2013.

<sup>190</sup> Cited in <http://www.nrdc.org/land/wilderness/artech/farc2000.asp>, retrieved 8 August, 2013.

<sup>191</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp> on 8 August, 2013.

<sup>192</sup> See also (Nellemann 1998), cited in <http://www.nrdc.org/land/wilderness/artech/farc2000.asp>, retrieved 8 August, 2013.

1992), involves observation of the Milne Point oil field complex approximately 130 miles west of ANWR, and is thus particularly relevant to the discussion here, as explored in the following paragraphs.

Cameron et al.'s (1992) study was conducted over a ten-year period that began approximately four years prior to the construction of a major drilling access road within the Milne Point complex, and continued for another five years after completion of the road's construction. The study aimed to measure any change in local caribou population density over this period, which it did by conducting point counts along transects parallel to and at increasing distances from the construction site. Ultimately, it found that, over those ten years, the caribou population within the region of the Milne Point oil-field complex had shifted away from the newly constructed access road, which Cameron et al. concluded was "apparently in response to increasing surface development" (p. 338). This is at the core of NRDC's argument that oil development is harmful to caribou.

A few years later, however, the above study was replicated by a second team of scientists, including the aforementioned Dr. Matthew Cronin, and produced a very different result. The second study (Noel et al. 2004) was built on the data collected in the original one, but included an additional empirical dataset covering a period referred to as "recent post-road construction". It found that, as of 2001, approximately 18 years after completion of the access road's construction, the caribou population had shifted back in towards the Milne Point road, which its authors suggested, "may reflect habituation of calving caribou to the road and associated human activity" (p. 765). This second study therefore supports Arctic Power's 'coexistence' narrative, by indicating that the caribou were able to recognize the road as a non-threat and become accustomed to it over time, and are therefore not negatively affected by development in the long run.

As demonstrated here, the available science has apparently been unable to resolve the question of whether or how the arctic caribou are impacted by oil development, and has instead been used to accentuate areas of disagreement, to heighten tensions between special interests groups who differently interpret relevant data, and also to reduce the issue of environment-industry interactions to the specific behaviors of a single wildlife species within a confined location. And yet, the clash of viewpoints around the Milne Point oil field complex does not end there.

Another two years after release of the second study, a third team of scientists published an article criticizing the conclusions drawn from the second. Joly et al. (2006) pointed out that, between the time that the first and second studies were carried out, additional roads and drilling pads had been constructed. They therefore suggested that, rather than the caribou moving back into the areas adjacent to the initially constructed road, they were in fact moving away from other, newer roads.

The third team of scientists additionally criticized the second study for conducting multiple caribou surveys per year in many cases, but choosing to consider in its analysis only “the survey with the largest number of caribou observed” (Noel et al. 2004, p. 759) in each year. This meant, for example, that in 1994 a caribou count of 80 was included in analysis, whereas the earlier counts of 12 and 5 were disregarded (Appendix A, p. 768). In total, Noel et al. (2004) excluded from analysis six out of the thirteen surveys conducted, producing a different set of results than if, for instance, the six highest caribou counts had been thrown out. None of these details or discussions, or their associated criticisms, however, have sufficiently informed the drilling debate itself. Instead, sound bites from the studies mentioned here, among others, are selectively referenced by NRDC and Arctic Power.

Both the replicate study by Noel et al. (2004), and the critical appraisal of it offered two years later by Joly et al. (2006), appeared in respective issues of the *Wildlife Society Bulletin*, which prints “peer-reviewed” (The Wildlife Society 2013) scientific research and relevant commentary by various wildlife experts. More specifically, the *Wildlife Society Bulletin* publishes “peer-refereed” articles, which have been approved by the bulletin’s editor, an associate editor, and between two and four other independent referees; as well as “peer-edited” articles, which are somewhat less rigorously reviewed by “an editorial panel of academicians and resource professionals”, in order “to expedite dissemination of timely resource information” (The Wildlife Society 2013). The former article mentioned above, by Noel et al. (2004), was peer-refereed, whereas the latter, by Joly et al. (2006), was peer-edited.

Moreover, the very same issue of the *Wildlife Society Bulletin* that contained the latter article, also included a peer-edited defense by Noel et al. (2006) of their original study, which appeared in the pages immediately subsequent to Joly et al.’s (2006) challenge. In this evaluation of their reevaluation, Noel et al. (2006) responded to the criticisms by Joly et al. (2006), explaining that consideration of the more recently introduced drilling infrastructure was simply outside the parameters of

their study, in line with its aim to replicate the procedures of the original study as closely as possible, and as clearly stated in its methodology. Furthermore, Noel et al. (2006) emphasized that they “did not draw conclusions” (p. 870) but rather performed an experiment according to its established rationale and design, and then “discussed possible explanations for [their] observations” (p.870), which happened to contradict those of the original study.

The Milne Point Road example clearly illustrates certain limitations of communicating scientific research findings to a public audience, as well as potential opportunities for interpretation by its communicators. It would seem from the above that scientists are moving away from, rather than towards, consensus on the issue of wildlife-development interaction. Likewise, public understanding has become increasingly muddled instead of enhanced. Even so, both Arctic Power and NRDC have benefitted from exchanges like the above, in the sense that each has drawn legitimacy from the particular studies that support its position on environmental impact.

Ultimately, the oil lobby group can attest that, “there is little reason to fear that caribou at ANWR would be harmed<sup>193</sup>”, whereas the environmental lobby group can insist that “it is premature to proceed [with development...g]iven the uncertainties and the high stakes<sup>194</sup>”. In the process of bolstering such assertions, however, a narrow and highly technical discussion, fueled by powerful, political interests, has been elevated to the status of a deciding factor in the debate. Similarly, lost in the debate is the important context in which to interpret and more fully understand the available, relevant material evidence, and thus a sense of the bigger picture.

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<sup>193</sup> Retrieved from <http://www.anwr.org/features/issues/wildlife-protect.htm> on 9 August, 2013.

<sup>194</sup> Retrieved from <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf> (p. 15) on 9 August, 2013.

## **CHAPTER 6:**

### **“PORTRAYAL OF THE KNOWERS AND THE UNKNOWN”**

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Having addressed several key material claims made by Arctic Power and NRDC, in this penultimate chapter I explore how the lobby groups engage with particular individuals and institutions at the upstream end of scientific knowledge production. I also consider the lobby groups’ respective strategies for deploying technical information in the effort to garner popular support and connect with lay public audiences downstream. From each of these angles, I explore how Arctic Power and NRDC position themselves within the mid-stream (as defined in chapter four), and in relation to one another.

The two lobby groups operate within certain confines of expertise, on account of their materialist framing of the ANWR conflict and repeated scientific appeals. Yet, Arctic Power and NRDC are not held to the same standards of precision or rigor as the experts themselves. Both groups generalize and theorize, for example, outside the specific parameters of empirical investigation, as practitioners are strictly prohibited from doing. Accordingly, the final section of this chapter looks specifically at how the two lobby groups communicate areas of insufficient scientific data, uncertainty, and risk, which are particularly open to interpretation.

#### **6.1 NEGOTIATING EXPERTISE**

NRDC brands itself as an organization with exceptional scientific expertise. The biographies and contact information of several staff scientists are available on the organization’s webpage, as are the qualifications and credentials held by its board of trustees. In 2006, NRDC also created a Science Center to support its environmental advocacy work by bolstering the organization’s research and advisory capacities, and expanding its “overall scientific authority<sup>195</sup>”. The Science Center is charged with the “dual mission of expanding NRDC’s technical capabilities as well as increasing the visibility of environmental policy debates within the scientific community<sup>196</sup>”. NRDC thus considers science pertinent to its mission, but

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<sup>195</sup> Retrieved from <http://www.nrdc.org/about/partnershipforearth.asp> on 18 June, 2013.

<sup>196</sup> Retrieved from <http://www.nrdc.org/media/pressreleases/061115.asp> on 18 June, 2013.



additionally sees its own initiatives and endeavors as contributing to the mission of science.

NRDC adopts many of the standards and practices, as well as much of the language, adhered to within the scientific community, even providing frequent accounts from the vantage point of scientists themselves. It describes, for example, that “scientists consider the coastal plain to be the biological heart of the entire refuge<sup>197</sup>”, and that “archaeologists have found 13 species of dinosaur fossils in [Arctic Alaska], which boasts fossils from the late Cretaceous period—some 68 million to 73 million years ago<sup>198</sup>”. Similarly, technical data reported by the environmental organization are overwhelmingly sourced from peer-reviewed scientific literature, and cited accordingly. In all of these ways, NRDC, though primarily a mid-stream lobby group tasked with the dissemination and interpretation of science, operates further upstream than its pro-drilling counterpart by also engaging directly in the process of scientific knowledge generation.

Arctic Power’s engagement with the scientific establishment is somewhat more skeptical and tenuous than NRDC’s. For instance, many of the oil lobby group’s evidence-based claims are accompanied by disclaimers, qualifications, or modifications, and others are unconventionally or inadequately cited. In his testimony to the U.S. House of Representatives, for example, Arctic Power spokesman Roger Herrera reported results from the U.S. Geological Survey’s 1998 Petroleum Assessment, but added a lengthy challenge asserting that its figures “are extraordinarily conservative and can be considered minimal and pessimistic<sup>199</sup>”. In another example, Arctic Power cites a report by the National Center for Public Policy Research as evidence of “the history of ecologically safe oil drilling in Alaska and the considerable benefit that ANWR’s vast oil reserves would provide<sup>200</sup>.” That report, however, in turn cites the Arctic Power website – 17 times – to support its own claims (Carlisle 2001).

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<sup>197</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp> on 18 June, 2013.

<sup>198</sup> Retrieved from <http://www.nrdc.org/land/wilderness/alaska/warctic.pdf> on 18 June, 2013.

<sup>199</sup> Retrieved from <http://www.anwr.org/features/politics/congress.htm> on 20 November, 2013.

<sup>200</sup> Retrieved from <http://www.anwr.org/features/issues/wildlife-protect.htm> on 18 June, 2013.

The oil lobby group occasionally borrows the authoritative vocabulary of science, including words like ‘expert’, ‘research’, and ‘analysis’, for use outside of a peer-reviewed or institutionally monitored context. It also distinguishes scientific information, otherwise referred to as facts or evidence, or “the truth<sup>201</sup>”, from the processes and people who produce it. Arctic Power warns, for example, that not all scientists or research bodies deserve equal merit, and that certain of them are driven by selfish or nefarious motives, as explored in the following section.

NRDC echoes the point that material data is susceptible to manipulation, however the environmental lobby group, rather than explicitly positioning itself as an intermediary of science, draws a distinction between legitimate science and bad science<sup>202</sup>, or more definitively, between science and *non*-science. These and other discriminations particularly come into play when Arctic Power and NRDC respond to one another’s presentations of the evidence, and more generally when they characterize one another’s ‘biased’ agendas in the ANWR drilling debate, which I turn to next.

### **6.1.1 Accusations of Bias**

An implication of the materialist framing of the drilling debate promoted by both the for- and against-drilling campaigns is that they allow no room for positionality or discretion, much less for the acknowledgement of particular values, investments, or emotions. This message is reinforced by the explicit accusations of bias made by each of the lobby groups and directed at the other. The nature of these accusations, however, and of the alleged bias itself, differs slightly between the groups.

Arctic Power repeatedly depicts environmental groups as emotional, sentimental, and susceptible to, as well as propagators of, both evocative and provocative rhetoric. It further suggests that such groups’ attachments hinder their ability to exercise rational judgment, or to discern what they know from what they “believe<sup>203</sup>”, thus rendering their claims untrustworthy. The oil lobby group describes, for

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<sup>201</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 19 June, 2013.

<sup>202</sup> Also commonly referred to as “junk science”.

<sup>203</sup> Retrieved from <http://www.nationalcenter.org/NPA324.html>, referred by <http://www.anwr.org/features/issues/wildlife-protect.htm> on 19 June, 2013.

example, that “since the beginning, the issue of caribou and oil has been a highly emotional and often misrepresented topic with regard to Alaskan North Slope oil exploration<sup>204</sup>”. It also alleges that “environmental groups and government agency biologists [...] present biased, negative appraisals of the impacts of oil fields on wildlife. This serves to misinform the public and elected officials<sup>205</sup>”. In this way, Arctic Power’s depiction of environmentalists as impassioned and partial extends to the scientists and researchers who study environmental issues, and in particular to those who have been hired either by environmental advocacy groups or by regulatory government agencies.

It would be reasonable to assume that the investigations pursued by such environmental scientists are necessarily partial in the sense that they primarily aim to assess the impact of human activities on the natural environment, and thus address a very specific set of questions while eluding others. More precisely, such studies could be described as ‘negative’, in that they aim to identify potentially adverse effects of oil development, rather than focus on aspects of independence or conceivable mutual agreement. These are not, in themselves, features of fraudulence or deception, however, but of strategic scientific inquiry.

Significantly, very little of Arctic Power’s rebuttal refutes, or even refers to, specifics within the evidence presented by NRDC and other anti-drilling groups. Instead, Arctic Power attacks the credibility of the groups that have produced and disseminated such evidence. It also offers up an additional and alternative set of data that supports its own case, insisting that “we must give the public and elected representatives the truth about potential environmental impacts.<sup>206</sup>” This substitution of the evidence is intended to demonstrate that the environmental movement is “without legitimate ecological grievances<sup>207</sup>”, and to expose opposition to drilling as

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<sup>204</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 19 June, 2013.

<sup>205</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 19 June, 2013.

<sup>206</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 19 June, 2013.

<sup>207</sup> Retrieved from <http://www.nationalcenter.org/NPA324.html>, referred by <http://www.anwr.org/features/issues/wildlife-protect.htm> on 19 June, 2013.

“unfounded”<sup>208</sup>. The oil lobby group articulates its role in this endeavor as the following:

*Arctic Power is here to level the playing field and is well known on both sides of the aisle to be a level headed and fact based voice, not propaganda based and biased. [... We] have the top experts from an environmental perspective as well as industry and government perspectives to draw on as a resource base in presenting our facts and figures.*<sup>209</sup>

As demonstrated in the previous chapter, Arctic Power publicizes scientific studies that call previously identified environmental impacts associated with oil development into question, and which focus on the more benign aspects of energy production. On the specific issue of impact to wildlife, the lobby group boasts,

*Millions of dollars of research on wildlife resources and their habitat on Alaska's North Slope have not only immeasurably increased the scientific understanding of arctic ecosystems but have also shown that wildlife and petroleum development and production can coexist*<sup>210</sup>.

Many of the studies referred to were conducted and authored or contributed to by the aforementioned Dr. Matthew Cronin, who describes that his “findings have been published in scientific journals [...], but are frequently ignored or downplayed by government biologists and environmental groups”<sup>211</sup>. Even more seriously, Cronin suggests that such biologists, for example from the U.S. Fish and Wildlife Service as well as the National Research Council, which he mentions by name, not only exercise selective vision but take pains to mask their bias, and even go so far as to manipulate the evidence so that it conforms to a particular desired result. The following excerpt by Cronin is published on the Arctic Power website.

*The selective use of information by the anti-development groups is readily apparent in the recent National Research Council's [2003] report “Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope”. During the caribou herd's overall growth from 5,000 to 32,000 animals between the 1970's and 2002, there was a decline in the herd between 1992 and 1995. The decline was most apparent in the*

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<sup>208</sup> Retrieved from <http://www.nationalcenter.org/NPA324.html>, referred by <http://www.anwr.org/features/issues/wildlife-protect.htm> on 19 June, 2013.

<sup>209</sup> Retrieved from <http://www.anwr.org/Politics/Arctic-Power-Back-in-Washington.php> on 20 June, 2013.

<sup>210</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Arctic-National-Wildlife-Refuge-the-issue.php> on 20 June, 2013.

<sup>211</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 20 June, 2013.

*western part of the herd's range that contains the oil fields. This was followed by an increase between 1995 and 2000. [...] The NRC report (in 2003) incredibly ignored the overall herd increase, and attributed the decline between 1992-1995 to the oil fields combined with increased harassment by mosquitoes and flies. In 2001, the U.S. Fish and Wildlife Service also attributed the decline to the oil fields, but this time it was in combination with bad winter weather. It would be obviously biased to say the oil fields caused a decline only in some years and ignore the overall growth of the herd. The biologists therefore came up with secondary impacts, weather or insects, to support their claims<sup>212</sup>.*

In pushing back against the science disseminated by environmental groups, and particularly against the cumulative considerations and 'precautionary principle' (Sandler and Pezzullo 2007, p. 148) upheld by the conceptual framework in which that science was generated, Cronin denies that a direct and isolated causation between oil development and herd numbers can be established. On these grounds, he reiterates Arctic Power's charge that "scientists and stakeholders in the resource industries must continue to aggressively present factual information, and correct biased reporting,<sup>213</sup>" thereby depicting industry scientists as bias-free.

In a mirrored indictment, NRDC derides the capacity of industry scientists to conduct detached and rational assessment of the material evidence. In this reversal of roles, however, the emotion allegedly submitted to is greed. Put concisely, the environmental lobby group maintains that "the drive to drill in the Arctic Refuge is about oil company profits<sup>214</sup>", and that consultants to private industry are "in the habit of massaging data to support corporate profits<sup>215</sup>." An NRDC staff blog entry reads,

*[...] industry-funded science is likely to be biased, and should be viewed with reasonable skepticism, if not rejected outright for consideration in judging a matter for which the funding industry has a financial or legal interest<sup>216</sup>.*

Another column, by prominent NRDC environmental lawyer and advocate Robert F. Kennedy Jr., lays the more acute charge that, "over the past two decades, industry

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<sup>212</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 19 June, 2013.

<sup>213</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 19 June, 2013.

<sup>214</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 20 June, 2013.

<sup>215</sup> Retrieved from <http://www.nrdc.org/bushrecord/science/rfk.asp> on 20 June, 2013.

<sup>216</sup> Retrieved from [http://switchboard.nrdc.org/blogs/jsass/supreme\\_court\\_says\\_no\\_to\\_exxon.html](http://switchboard.nrdc.org/blogs/jsass/supreme_court_says_no_to_exxon.html) on 20 June, 2013.

and conservative think tanks have invested millions of dollars to corrupt science<sup>217</sup>. He elaborates in the following.

*[Industry supporters] have produced assorted hired guns and conservative think tanks to further their goals [and] are engaged in a campaign to suppress science that is arguably unmatched in the Western world since the Inquisition. Sometimes, rather than suppress good science, they simply order up their own. [...] They distort the truth about tobacco, pesticides, ozone depletion, dioxin, acid rain and global warming. In their attempt to undermine the credible basis for public action (by positing that all opinions are politically driven and therefore any one is as true as any other), they also undermine belief in the integrity of the scientific process<sup>218</sup>.*

NRDC reiterates this accusation throughout its website, and documents several examples of oil industry-supported ‘junk science’ pertaining to the ANWR drilling debate specifically. The ‘unsound’ scientific studies referred to by the environmental lobby group primarily address impacts of development on wildlife species such as caribou, polar bears, muskoxen, and snowgeese<sup>219</sup>.

Indeed, the oil industry has the potential to reap the highest concentration of rewards should development in ANWR be permitted. Even Arctic Power, the industry’s own lobby group, admits that associated oil profits would most directly and immediately benefit top-level industry executives, and then “trickle down<sup>220</sup>” through the general public. That said, the above allegations of bias made by NRDC, and the analogous allegations made by Arctic Power noted earlier, indicate a significant break with scientific orthodoxy. Specifically, both lobby groups employ the technical term ‘bias’ within a scientific context, but outside of its precise technical usage.

As described in the discussion on ‘universalization’ in chapter four, it is an explicit principle within institutionalized science that theories be “evaluated according to impersonal criteria irrespective of their source” (in Yearley 2005, p. 8, Merton 1973). Thus, the presence of bias in a particular investigation cannot be determined solely on the basis of its investigators, but must instead be identified, and ideally eliminated, through the scientific process itself by way of adherence to its

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<sup>217</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 20 June, 2013.

<sup>218</sup> Retrieved from <http://www.nrdc.org/bushrecord/science/rfk.asp> on 20 June, 2013.

<sup>219</sup> Listed, for example, on [http://www.nrdc.org/bushrecord/wildlife\\_arctic.asp](http://www.nrdc.org/bushrecord/wildlife_arctic.asp) and <http://www.nrdc.org/bushrecord/science/rfk.asp>, both accessed 20 June, 2013.

<sup>220</sup> Retrieved from <http://www.anwr.org/Latest-News/Alaska-Crude-Oil-Prices-Hit-Record-Highs.php> on 20 June, 2013.

established protocols. Each lobby group relies on the merits of this meticulous system to affirm the transcendence of its own materialist assertions, but overlooks them when evaluating claims that potentially threaten its political agenda.

On this point, NRDC's scientific discourse differs from Arctic Power's efforts to 'level the playing field' in one significant way. The environmental lobby group, in addition to attacking the integrity of its opposition, frequently addresses particulars within the evidence presented by pro-industry groups as well. In several instances, NRDC offers lengthy refutations of the findings from industry-funded studies, for example in the case of the American Petroleum Institute-sponsored WEFA Group report discussed in chapter four, as well as the wildlife research carried out by Cronin and his colleagues<sup>221</sup> (see also Grunwald 2001). It remains the case, however, that the primary offensive argumentation strategy employed by both Arctic Power and NRDC involves the reification of technical knowledge as universal Truth. At the same time, their defensive strategies depend heavily on a conceptual separation between science as superior knowledge and the imperfect analyses carried out by variously interested scientists, the latter of which must be met with skepticism and scrutiny.

A final, related component of the lobby groups' characterizations of one another, is that each portrays the other's biased position as extreme and aligned with a marginal agenda that is out of touch with the needs and perspectives of the broader population. For example, Arctic Power associates the anti-drilling campaign with "radical environmentalism"<sup>222</sup> and "environmental extremism"<sup>223</sup>, labeling its constituents "eco-activists"<sup>224</sup>, "anti-development advocates"<sup>225</sup>, and "eco-imperialists"<sup>226</sup>. NRDC, in turn, describes that drilling in ANWR is supported by "pro-polluters", "anti-environment" factions, and the handpicked recipients of "Big Oil's

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<sup>221</sup> Listed, for example, on [http://www.nrdc.org/bushrecord/wildlife\\_arctic.asp](http://www.nrdc.org/bushrecord/wildlife_arctic.asp) and <http://www.nrdc.org/bushrecord/science/rfk.asp>, both accessed 20 June, 2013.

<sup>222</sup> Retrieved from <http://www.anwr.org/Headlines/C.O.R.E-Rallies-for-ANWR.php> on 30 June, 2013.

<sup>223</sup> Ibid.

<sup>224</sup> Retrieved from <http://www.anwr.org/images/pdf/InnisspeechWisfinal.pdf> on 30 June, 2013.

<sup>225</sup> Retrieved from <http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf> on 21 June, 2013.

<sup>226</sup> Ibid.

Monopoly Money<sup>227</sup>. This use of “negative other-presentation” (van Dijk 2006a) as a persuasive rhetorical strategy not only serves each lobby group by rendering its opposition as radical and self-interested, but by contrast also facilitates its own “positive self-presentation” as neutral, moderate, and trustworthy, which I turn to next.

### 6.1.2 Assurances of Balance

Just as Arctic Power and NRDC incorporate non-technical definitions of bias into their materialist discourses, namely in the course of refuting unfavorable findings, so do they expand on strictly institutional notions of objectivity to strengthen their own scientific credibility. References to ‘balance’ in particular are invoked by each of the groups, though often to the effect of obscuring rather than clarifying the relevant ANWR science. This is true, in part, because the colloquial term ‘balance’ is essentially a relative concept, and subject to the discretionary weighing of individual factors as well as to the initial calibration of the scale. A few illustrative examples follow.

According to NRDC, which views oil drilling as fundamentally at odds with environmental stewardship, any approach to energy development that includes petroleum production would also need to incorporate stringent and unprecedented environmental protections in order to be considered balanced. In the following excerpts, the lobby group asserts that oil development ought not even be considered without assurances that its associated local and global environmental impacts could be either mitigated or neutralized, for example by offsetting permission to drill in one area with permanent immunity to development in another.

*In 1976, Congress [...] instructed the Interior Department “to meet the energy needs of the Nation,” with “maximum protection” of fish, wildlife, and other surface values. An appropriations rider in 1980 opened [the Western Arctic] to an expedited leasing program, yet still no special areas were granted permanent protection. Audubon Alaska has proposed biological “hot spots” for protection from leasing and oil development. Yet the BLM [Bureau of Land Management] has ignored*

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<sup>227</sup> Retrieved from [http://switchboard.nrdc.org/blogs/plehner/what\\_will\\_it\\_take\\_to\\_eliminate.html](http://switchboard.nrdc.org/blogs/plehner/what_will_it_take_to_eliminate.html) and <http://www.onearth.org/article/beyond-oil-the-oil-industry-and-partisanship> on 30 June, 2013.



*this balanced proposal and instead moved to open nearly 100 percent of [the Western Arctic coastline] to leasing<sup>228</sup>.*

*The U.S. government should seek a balanced approach across America's Arctic that provides wilderness protection to the coastal plain of the Arctic National Wildlife Refuge to the east, and [to the west], permanent protection for its most biologically and culturally important areas and wilderness values. Any development that does occur within [the Western Arctic] should adhere to strict environmental standards, including those related to operations, cleanup, and restoration<sup>229</sup>.*

This 'balanced approach' to energy policymaking is presented by NRDC as a demonstration of the lobby group's reasoned and dispassionate assessment of ANWR. It contrasts significantly, however, with the similarly described balanced approach offered by Arctic Power.

Given the status Arctic Power affords petroleum as an essential energy source, the oil lobby group alternatively declares that any land management proposal that prohibits oil development, or any energy security plan that excludes fossil fuel production all together, would be necessarily unbalanced. This stance is also reinforced by Arctic Power's basic assertion that a "win-win balance<sup>230</sup>" naturally exists between North Slope oil production and a healthy Arctic environment.

More precisely, Arctic Power invokes the term balance, in conjunction with the terms "multiple-use", "coexistence", and "reconciliation", to assuage environmental concerns. As such, it portrays ANWR development as an objectively pragmatic measure; one that is compatible rather than at odds with other rational considerations, interests, and priorities. This message is expressed in the following.

*The issue of oil and gas leasing in the 8 percent of ANWR represented by the Coastal Plain should not be considered, therefore, as an "either/or" decision with respect to preservation of important fish and wildlife resources. The record of other petroleum development on the North Slope supports application of multiple use management concepts in ANWR. Nevertheless, in issuing its decision with regard to future management of the Coastal Plain of the Arctic National Wildlife Refuge, Congress will be faced with the challenge of reconciling diverse goals, national needs for additional domestic energy supplies, the national need and interest in preservation of wilderness or nearly wild lands, and the promise (in ANCSA and ANILCA) to Alaska Natives regarding*

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<sup>228</sup> Retrieved from <http://www.nrdc.org/land/wilderness/alaska/warctic.pdf> on 24 June, 2013.

<sup>229</sup> Retrieved from <http://www.nrdc.org/land/wilderness/alaska/warctic.pdf> on 24 June, 2013.

<sup>230</sup> Retrieved from <http://www.anwr.org/features/politics/congress.htm> on 20 November, 2013.

*continued availability of subsistence fish and wildlife resources. These goals are not, however, mutually exclusive. Given the oil and gas exploration and production technology existing today, the ANWR Coastal Plain can be opened to leasing that is consistent with all of these important requirements*<sup>231</sup>.

The oil lobby group thus represents ANWR development, not as a particularly interested political agenda, but as part of a reasonable, practical, and judicious national energy policy supported by disinterested material facts.

## **6.2 GARNERING POPULAR SUPPORT**

In further support of the above representation, Arctic Power contrasts ANWR development, not with renewable energy production as NRDC and other environmentalists do, but with foreign oil imports. The lobby group asserts that "foreign oil is produced and shipped under less strict environmental standards than domestic oil, [whereas] Alaska's oil fields are the cleanest in the world"<sup>232</sup>, and that "Arctic exploration technology is the most advanced in the world, [representing] the cutting edge in minimal impact with maximum return"<sup>233</sup>. As such, Arctic Power depicts ANWR development as an environmentally responsible, patriotic, and conscientious, in addition to practical, option, which could even "save the environment"<sup>234</sup>. These appeals to meliorism and American exceptionalism are illustrative of another persuasive rhetorical strategy employed by Arctic Power as well as NRDC, specifically to ensure that their respective technical claims resonate with a vast lay public audience.

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<sup>231</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Arctic-National-Wildlife-Refuge-the-issue.php> on 30, June, 2013.

<sup>232</sup> Retrieved from <http://www.anwr.org/OCS/Making-the-case-for-Arctic-National-Wildlife-Refuge-ANWR-development.php> on 30 June, 2013.

<sup>233</sup> Retrieved from <http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php> on 30 June, 2013.

<sup>234</sup> The headline of one Arctic Power webpage reads, "Drill here. Drill now. Drill ANWR. To pay less, save the environment, and stop sending trillions to foreign dictators." The lobby group is not explicit about how exactly drilling in ANWR would 'save the environment', though the text that follows links domestic drilling to reduced imports and thus "reduced risks of oil spills from tankers carrying foreign crude." It also describes that non-fossil fuel-based energy production would involve "devoting millions more acres of cropland to corn or cellulosic ethanol, converting our vehicle fleet to hybrid and flex-fuel cars, trying to build dozens of new nuclear power plants, and blanketing thousands of square miles with wind turbines and solar panels," thus jeopardizing the natural environment. Retrieved from <http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php> on 30 June, 2013.

### 6.2.1 American Values and Common Sense

The driving objective of any lobby group is to raise awareness of and support for its particular cause, and to effect political change and social movement accordingly. The materialist discourses of Arctic Power and NRDC achieve this by communicating relevant scientific information to elected officials and the general public. For their highly technical claims to be broadly convincing however, the lobby groups must also engage with popular experiences and lay understandings. As Benford describes, “[w]hatever else social movement actors do, they seek to affect interpretations of reality among various audiences” (p. 410). Likewise, the discourses of Arctic Power and NRDC, in addition to each positing a singular and external set of truths, also serve the paradoxical function of aligning those truths with prevailing narratives and notions of common sense.

As alluded to above, one method used by each of the lobby groups to normalize its own stance within the drilling debate and thus garner public support for its position, involves appealing to a sense of national pride and nostalgia, either for what once was or for what might be. In the following excerpts<sup>235</sup>, NRDC describes the Arctic Refuge as a shared cultural inheritance, referring to it as ‘our public estate’. The environmental lobby group also likens the preservation of ANWR to the preservation of core American values and the American ‘way of life’.

*An American Serengeti, the Arctic Refuge [...] is the greatest living reminder that conserving nature in its wild state is a core American value.*

*Opening the Arctic Refuge to energy development is about transferring our public estate into corporate hands so that it can be liquidated for a quick buck.*

*Oil from the refuge would hardly make a dent in our dependence on foreign imports -- leaving our economy and way of life just as exposed to wild swings in worldwide oil prices and supply as it is today.*

*The solution to America's energy problems will be found in American ingenuity, not more oil. [...] For example, Detroit has the technology right now to produce high-performance hybrid cars, trucks and SUVs. If America made the transition to these more efficient vehicles, far more oil would be saved than the Arctic Refuge is likely to produce. Doesn't that make far more sense than selling out our natural heritage and exploiting one of our true wilderness gems?*

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<sup>235</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 24 June, 2013.

These excerpts associate publically protected areas like ANWR with a spirit of togetherness and American exceptionalism, and most notably in the final question posed by NRDC, appeal to the common sense of the American public.

Further to the point regarding America's great energy efficiency potential, the environmental lobby group recently co-sponsored a study that identifies and quantifies associated market opportunities (Granade et al. 2009). In short, the study estimates that "a \$50 billion per year investment in energy efficiency could result in \$1.2 trillion in energy bill savings by 2020," and could also create "600,000 to 900,000 new jobs<sup>236</sup>". NRDC additionally charts out a path towards unlocking this ingenuity and potential, which entails "establish[ing] efficiency as an asset that banks are able to analyze, price, aggregate, securitize, and trade in secondary markets<sup>237</sup>". As such, the nationally aggregated cost-benefit projection above echoes that of Arctic Power regarding job creation around petroleum development, both in its endorsement of corporate capitalist society as well as its appeal to the promise of America.

The wider discourse of Arctic Power is similarly infused with patriotism, as demonstrated below. In making the case for increased domestic drilling, the lobby group urges that we 'invest in the U.S.A', proclaiming that "our own oil is better than anyone else's<sup>238</sup>". Also like NRDC, Arctic Power regularly appeals to the public interest and to 'common sense', and in fact mirrors many of the claims made by the environmental lobby group, albeit with a few critical adjustments. For instance, the oil lobby group refers to ANWR's energy, rather than its natural landscape, as 'our common heritage'. Arctic Power further links petroleum development to the high standard of living enjoyed by many Americans, the U.S. civil rights movement, and the 'American Dream', and draws on specific language from America's founding documents to engender support for drilling in ANWR.

*At \$135 a barrel, [ANWR oil] represents \$1.3 trillion that we would not have to send to Iran, Russia, Saudi Arabia and Venezuela. [...] It represents another \$400 billion in state and federal royalties and corporate income taxes – plus billions in lease sale revenues, plus*

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<sup>236</sup> Retrieved from <http://www.nrdc.org/greenbusiness/cmi/focus.asp> on 20 November, 2013.

<sup>237</sup> Ibid.

<sup>238</sup> Retrieved from <http://www.anwr.org/features/politics/congress.htm> on 20 November, 2013.

*thousands of direct and indirect jobs, in addition to numerous jobs created when this \$1.7 trillion total is invested in the U.S.A<sup>239</sup>.*

*We must never forget that it was mostly fossil fuels that made it possible to enjoy the incredible living standards we have today.*

*[...]*

*Energy is the master resource of modern society. It transforms our constitutionally protected rights into civil rights that we actually enjoy: jobs, homes, transportation, healthcare, modern living standards, and other earmarks of life, liberty and the pursuit of happiness<sup>240</sup>. [...]*

*Today, unfortunately, these common sense requests are under assault by environmentalists, politicians and even journalists who want to eliminate fossil fuels.*

*[...]*

*At the moment, over a dozen [bills to reduce fossil fuel dependence and lower greenhouse gas emissions] are pending in Congress. [...] Look around you. Just where are you and your family, company and community going to wipe out 80-plus percent of your emissions – and thus a large portion of your energy use? How are you going to pay for it, or replace it? And what effect will it have on your living standards? Your American dream?<sup>241</sup>*

*[ANWR] energy belongs to all Americans. It's not the private property of environmental pressure groups, or of politicians who cater to them in exchange for re-election support. This energy is likewise the common heritage of mankind. Politicians and eco-activists have no right to keep it off limits.<sup>242</sup>*

The above sentiment, that 'outsiders' want to take away that which rightfully belongs to 'us', is similarly reiterated by Arctic Power at a regional level. The oil lobby group cites polls conducted by the Dittman Research Corporation, which consistently show that a majority of Alaskans<sup>243</sup> support the opening of ANWR to development. NRDC counters this claim, however, arguing that "polls have consistently shown that a majority of Americans oppose drilling, even in the face of high gas prices and

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<sup>239</sup> Retrieved from <http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php> on 25 June, 2013.

<sup>240</sup> This is a reference to the US Declaration of Independence, adopted July 4, 1776, which famously declares, "that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."

<sup>241</sup> Retrieved from <http://www.anwr.org/images/pdf/InnisspeechWisfinal.pdf> on 25 June, 2013.

<sup>242</sup> Retrieved from <http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php> on 25 June, 2013.

<sup>243</sup> Cited, for example, on <http://www.anwr.org/People/Alaskans-Strongly-Support-ANWR-Development.php>, <http://www.anwr.org/People/>, [http://www.anwr.org/images/pdf/2011\\_PowerPt\\_on\\_ANWR.pdf](http://www.anwr.org/images/pdf/2011_PowerPt_on_ANWR.pdf), <http://www.anwr.org/features/natsecure.htm>, and <http://www.akrdc.org/newsletters/2001/april.pdf>, linked from <http://www.anwr.org/features/issues/wildlife-protect.htm>, all accessed 27 June, 2013.

misleading claims from oil interests. A June 2008 poll by the research firm Belden Russonello & Stewart found that 55 percent of the American public supports continued protection for the Arctic Refuge<sup>244</sup>.” In fact, countless polls have been conducted around the ANWR issue over the past several decades, and indeed results have varied with such factors as the price of oil and the current political and economic situation, as well as with the specific wording of the survey questions and, as the excerpts above indicate, the scale of the population being surveyed.

Nevertheless, Arctic Power and NRDC each borrow legitimacy from the various geographical and identity groups who share its position in the drilling debate, including from the indigenous peoples residing in ANWR (Moyer 2008). Arctic Power, for example, asserts that “the Coastal Plain belongs to all of us, but first it belongs to the Iñupiat of Kaktovik<sup>245</sup>”, whereas NRDC is emphatic that “the Gwich’in people [...] have built their lives for 10,000 years around caribou migrations [...] to calving grounds that would be irreparably disrupted by oil and gas development<sup>246</sup>.” The oil lobby group additionally invokes statements by organized labor<sup>247</sup> and U.S. veterans<sup>248</sup> to bolster its claims to legitimacy, while the environmental group purports to lobby on behalf of future generations<sup>249</sup>, whose needs and interests are not reflected in current polls.

### 6.2.2 Dispelling the Myths

On a closely related issue, the earlier excerpt by NRDC, which refers to “misleading claims from oil interests”, reveals one of the greatest challenges posed to each of the lobby groups in their quest to establish scientific and political rapport with the public at large. That is, to explain how the ANWR issue has remained undecided for so long, when the public has spoken and the facts are clear. Though both lobby groups appeal to the savvy of the American people, they simultaneously offer disclaimers about individuals or organizations whose support they do not enjoy, typically by painting them as victims of misinformation. Arctic Power, for instance, refers to the “citizens who have been bamboozled into thinking [energy resources]

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<sup>244</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 20 June, 2013.

<sup>245</sup> Retrieved from <http://www.anwr.org/features/politics/congress.htm> on 20 November, 2013.

<sup>246</sup> Retrieved from <http://www.nrdc.org/onearth/05win/reviews.asp> on 27 June, 2013.

<sup>247</sup> Retrieved from <http://www.anwr.org/features/pdfs/faces-labor.pdf> on 27 June, 2013.

<sup>248</sup> Retrieved from <http://www.anwr.org/features/pdfs/faces-veteran.pdf> on 27 June, 2013.

<sup>249</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 27 June, 2013.

cannot be developed without destroying priceless ecological values<sup>250</sup>.” NRDC similarly alleges that the Teamsters<sup>251</sup> labor union was enticed into supporting ANWR development by “a misleading oil industry study [claiming] that drilling in the Arctic Refuge would generate more than 700,000 jobs nationwide<sup>252</sup>” (see discussion of ‘The WEFA Group Report’ in chapter five for further details about that study).

In order to push back against what each lobby group views as “false claims<sup>253</sup>” and “fraudulent rhetoric<sup>254</sup>,” Arctic Power and NRDC repeatedly refer to the excess of propaganda that surrounds the ANWR issue. Specifically, each group contrasts ‘the myths’ generated by its opposition with ‘the facts’, further reinforcing a materialist framing of the drilling debate. Arctic Power, for example, decries that “in the debate about responsible and balanced exploration in a small part of the Arctic National Wildlife Refuge (ANWR), there are myths... and then there are the facts<sup>255</sup>”. The oil lobby group’s website also displays compiled lists of ‘myths’ pertaining to ANWR, each of which is juxtaposed with a statement labeled either ‘reality<sup>256</sup>’ or ‘fact<sup>257</sup>’.

The following texts from the NRDC website provide a few analogous examples.

*A close look at how four decades of this sprawling oil development has destroyed Prudhoe Bay dispels the myth that drilling can take place in the nearby Arctic National Wildlife Refuge coastal plain without permanently damaging the landscape and the wildlife that depends on it<sup>258</sup>.*

*While proponents of drilling insist that the Arctic Refuge could be developed by disturbing as little as 2,000 acres within the 1.5-million-*

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<sup>250</sup> Retrieved from <http://www.anwr.org/images/pdf/InnisspeechWisfinal.pdf> on 27 June, 2013.

<sup>251</sup> The Teamsters, formally named the International Brotherhood of Teamsters (IBT), is an organized labor union representing over a million truck drivers and other workers in the US and Canada.

<sup>252</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farcjobs.asp> on 27 June, 2013.

<sup>253</sup> Retrieved from <http://www.nrdc.org/bushrecord/science/rfk.asp> on 27 June, 2013.

<sup>254</sup> Retrieved from <http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php> on 24 June, 2013.

<sup>255</sup> Retrieved from <http://www.anwr.org/features/natsecure.htm> on 27 June, 2013.

<sup>256</sup> Retrieved from <http://www.akrdc.org/newsletters/2001/april.pdf>, linked from <http://www.anwr.org/features/issues/wildlife-protect.htm> on 27 June, 2013.

<sup>257</sup> Retrieved from <http://www.anwr.org/features/natsecure.htm> on 27 June, 2013.

<sup>258</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.pdf> on 27 June, 2013.

*acre coastal plain, an NRDC analysis reveals this to be pure myth.*<sup>259</sup>  
*[...] Here are the facts that give the lie to this canard [...]*<sup>260</sup>.

Thus, in identifying itself with scientific facts, and its opposition with unscientific and therefore unreliable claims, NRDC portrays itself as a uniquely dependable source of technical data pertaining to ANWR.

As the above paragraphs demonstrate, the materialist discourses of Arctic Power and NRDC, in addition to providing evidence-based accounts of the ANWR issue, additionally each lay out a broader framework for assessing available information, and for discerning legitimate facts from unsubstantiated myths. Specifically, each group draws on the positivist ideals of objectivity, universality, and technical proficiency to attack the credibility of its political opposition, as well as to assert its own scientific authority.

### **6.3 MANAGING UNCERTAINTY**

It would appear from the dominant technical arguments explored earlier in this chapter and in the preceding chapter, that the available science on ANWR is conflicting and inconclusive. Indeed, both Arctic Power and NRDC repeatedly point to the need for much further empirical investigation, albeit in different areas. Accordingly, their discourses not only communicate what is known about ANWR, but they also serve to represent the many remaining questions, risks, opportunities, and unknowns surrounding the issue. Though much of this thesis focuses on the roles of deduction, discretion, and mediation in the establishment of scientific facts, underexplored areas of inquiry arguably provide even more room for interpretation and inference.

While Arctic Power and NRDC agree that many knowledge gaps exist, there is much disagreement between the groups about the significance of such gaps, and more importantly, about if and how they ought to be incorporated into decision-making. Numerous examples of inconsistencies, ambiguities, and insufficient evidence are highlighted by each of the lobby groups, often simply to call one another's categorical assertions into question, but in some cases to implore political or public action, and in others to urge restraint.

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<sup>259</sup> Retrieved from <http://www.nrdc.org/land/wilderness/arctic.asp> on 27 June, 2013.

<sup>260</sup> Retrieved from <http://www.nrdc.org/land/wilderness/artech/farc2000.asp> on 27 June, 2013.



As described in the previous chapter, Arctic Power refers to Arctic climate science as “inaccurate and highly speculative, if not outright unprovable<sup>261</sup>,” citing its many variables and unknowns as cause to stall legislation aimed at lowering greenhouse gas emissions, and to resist a transition away from fossil fuels. NRDC, on the other hand, offers a different assessment, which reiterates that too little is known about the issue but insists on “the high cost of doing nothing<sup>262</sup>”. The environmental lobby group explains,

*Climate change is a complex phenomenon, and its full-scale impacts are hard to predict far in advance. But each year scientists learn more about how climate change is affecting the planet and our communities, and most agree that certain consequences are likely to occur if current trends continue<sup>263</sup>.*

*Scientists say that the earth could warm by an additional 7.2 degrees Fahrenheit during the 21st century if we fail to reduce emissions from burning fossil fuels, such as coal and oil<sup>264</sup>.*

*“We must act now to spur the adoption of cleaner energy sources at home and abroad<sup>265</sup>.*

In the above, NRDC invokes the unforeseen consequences of climate change to call for an aggressive overhaul of the U.S. energy economy. It also points to the same unforeseen consequences as reason to refrain from allowing oil exploration in ANWR. As the environmental lobby group describes, “global warming adds an increased level of complexity for predicting consequences,<sup>266</sup>” and thus requires that regulatory agencies take “a precautionary approach to proposed commercial activity<sup>267</sup>”. This point is elaborated in a report that was prepared by NRDC in 2008, which offered recommendations to the administration of the newly elected President Barack Obama. The following is an excerpt from that report.

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<sup>261</sup> Retrieved from <http://www.anwr.org/Latest-News/C.O.R.E-Rallies-for-ANWR.php> on 30 June, 2013.

<sup>262</sup> Retrieved from <http://www.nrdc.org/globalwarming/climate-disruption-tax.asp> on 21 August, 2013.

<sup>263</sup> Retrieved from <http://www.nrdc.org/globalwarming/f101.asp#5> on 28 June, 2013.

<sup>264</sup> Retrieved from <http://www.nrdc.org/globalWarming/fcons.asp> on 28 June, 2013.

<sup>265</sup> Retrieved from <http://www.nrdc.org/about/staff/climate-change-experts.asp> on 28 June, 2013.

<sup>266</sup> Retrieved from <http://www.nrdc.org/land/wilderness/alaska/warctic.pdf> on 28 June, 2013.

<sup>267</sup> Retrieved from [http://docs.nrdc.org/legislation/files/leg\\_08112401a.pdf](http://docs.nrdc.org/legislation/files/leg_08112401a.pdf) on 29 June, 2013.

*The Arctic is “the least studied and most poorly understood area on Earth<sup>268</sup>.” [...] What scientists do know, however, is that what happens in the Arctic affects the global climate and ecosystems and people thousands of miles away. Unfortunately, they also know that the Arctic is already at the forefront of global climate change: it is warming at about twice the rate of the rest of the planet, with substantial impacts on the people and ecosystems of the region. [...] The new Administration should impose a “time out” on all further Federal oil and gas activity in the Arctic, including, to the extent allowed by law, areas previously leased, until a scientific assessment of the potential impacts is completed<sup>269</sup>.*

NRDC thus proposes halting fossil fuel exploration altogether on account of inadequate scientific understanding about the associated environmental risks. In stark contrast to this, however, Arctic Power asserts that without having established a causal link between North Slope oil operations and measurable environmental consequences, there is no cause for alarm or procedural adjustment.

For its part, the oil lobby group refers to work conducted by the Argonne National Laboratory towards assessment of the potential environmental impacts associated with a proposed extension of the Trans-Alaska Pipeline System. Arctic Power cites that the Lab “found no evidence that oil development harmed the Central Arctic [Caribou] Herd<sup>270</sup>”. The lobby group thus concludes that, “there is little reason to fear that caribou at ANWR would be harmed<sup>271</sup>”, further affirming that, “there are no scientific studies by regulatory agencies, academic institutions or industry that document population declines of any species in the arctic related to oil industry activity<sup>272</sup>”. Thus, instead of risk, Arctic Power sees potential and opportunity in the unknowns surrounding ANWR development.

In the following, the oil lobby group describes uncertainty about the precise quantity and location of oil in ANWR as reason itself to launch drilling operations.

*The geologic indicators are very favorable for the presence of significant oil and gas resources in ANWR, but the limited data means that there is*

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<sup>268</sup> U.S. Arctic Research Commission, Report on Goals and Objectives for Arctic Research at “A Message from the Chair” (2005), available at <http://www.arctic.arctic.gov/files/USARCReportOnGoals2005.pdf>, cited in [http://docs.nrdc.org/legislation/files/leg\\_08112401a.pdf](http://docs.nrdc.org/legislation/files/leg_08112401a.pdf), accessed on 28 June, 2013.

<sup>269</sup> Retrieved from [http://docs.nrdc.org/legislation/files/leg\\_08112401a.pdf](http://docs.nrdc.org/legislation/files/leg_08112401a.pdf) on 28 June, 2013.

<sup>270</sup> Retrieved from <http://www.anwr.org/features/pdfs/caribou-facts.pdf> on 30 June, 2013.

<sup>271</sup> Retrieved from <http://www.anwr.org/features/issues/wildlife-protect.htm> on 8 August, 2013.

<sup>272</sup> Retrieved from <http://www.anwr.org/features/pdfs/faces-caribou.pdf> on 30 June, 2013.

*a high level of uncertainty about how much oil and gas may be present. Consequently, current estimates represent the best scientific guesses. [...] The validity of these estimates can be proved only by drilling exploratory wells. Authorization for exploration must be given by Congress and the President*<sup>273</sup>.

Arctic Power further suggests,

*The estimates of oil from ANWR's Coastal Plain might even be low. When Prudhoe Bay began production, experts said it would produce eight billion barrels of oil. So far, Prudhoe Bay has produced 14 billion barrels*<sup>274</sup>.

The oil lobby group, in asserting that “only drilling will tell<sup>275</sup>,” thus aligns the mandate of scientific inquiry, to seek answers to questions and to broaden our collective understanding of the physical world, with its own agenda to open ANWR to oil development.

The disparate assessments and corresponding suggested courses of action laid out by NRDC and Arctic Power above, seem to indicate that each group implicitly assigns a different remit to science in the context of the drilling debate. Specifically, Arctic Power's position defaults to the authorization of development in ANWR, barring convincing evidence that it would directly lead to significant environmental consequences. Conversely, NRDC operates on the precautionary principle, asserting that “study and assessment needs to produce convincing evidence that any new industrial activities pose little threat to the environment<sup>276</sup>”. As such, the environmental lobby group defaults to the restriction of all industry activities unless and until they can be scientifically vetted. Without acknowledging these clashing predispositions, however, and the associated demands they place on the evidence itself, discussion of the facts cannot move the underlying dispute towards resolution.

More fundamentally though, a close look at how Arctic Power and NRDC differently negotiate uncertainty, as well as interpret available data and also solicit future research, reveals a fundamental equivalence between the groups in the way they allocate moral authority to materialist assumptions. The reductive and technical

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<sup>273</sup> Retrieved from <http://www.anwr.org/Background/How-much-oil-is-in-ANWR.php> on 28 June, 2013.

<sup>274</sup> Retrieved from <http://www.anwr.org/features/natsecure.htm> on 28 June, 2013.

<sup>275</sup> Retrieved from <http://www.anwr.org/Background/How-much-oil-is-in-ANWR.php> on 28 June, 2013.

<sup>276</sup> Retrieved from <http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf> on 20 November, 2013.

discourses of Arctic Power and NRDC draw on physical evidence to discern what is possible from what is likely, to distinguish between acceptable and unacceptable levels of risk, and to establish and order priorities. As such, they reflect each group's engagement in a process that is explicitly scientific, but implicitly subjective as well.

The critical analysis of Arctic Power's and NRDC's materialist discourses presented here raises questions about how we construct the 'problem' that needs solving in the context of the drilling debate; about what is important, or not; what is at stake, and for whom; and when evidence can be considered legitimate, or sufficient. Ultimately, it reveals a dynamic and dialectical relationship between the known and the unknown, between aspirations and fears, and between values and facts.

In sum, the conflict over ANWR is not merely fueled by factual discrepancies, but by a convergence of conceptions, valuations, and contextualizations of both energy and the environment. The debate further juxtaposes clashing visions of national prosperity, individual opportunity, and citizenship. The discourses of Arctic Power and NRDC thus serve to delineate and define the appropriate role of government, to prescribe the relationship between scientists and policymakers, and to shape our collective thinking about resource allocation, property rights, social responsibility, security, justice, and perhaps most importantly, about who to trust regarding all of the above. By framing the socio-political conflict over ANWR in evidence-based terms, however, the two lobby groups have together collapsed these practical, ethical, ideological, and essentially qualitative issues into a purely quantitative, value-free discussion, thus substituting materialism for morality.

## CHAPTER 7: CONCLUSION

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In this concluding chapter I revisit the research questions laid out in the introduction, pertaining to how scientific data on ANWR are represented by the oil industry and environmentalists. More critically, I review the social justice implications of the hegemonic materialist framing of the drilling debate by these dominant groups. I do this, namely, by identifying the interests and ideologies that have been emboldened by the ubiquitous use of reductionist, naturalizing, and technicizing language, as well as by acknowledging certain that have been obscured. I also reiterate the central argument of this thesis, which is that the hegemonic materialist framing of the ANWR drilling debate by dominant and politically opposed lobby groups serves to not only disempower the remaining underrepresented majority of stakeholders, but to conceal the very fact that they have been disempowered.

Most importantly, over these final pages I suggest a few important ways that the questions raised and critique offered here can lead to the arrival at some answers and the implementation of some practical, productive measures. Specifically, the critical analysis presented above not only identifies significant injustices reinforced and perpetuated through the status quo and the current drilling debate, but also enables the envisioning of a more 'utopian' (Levitas 2010) political-ecological democracy. As such, this chapter highlights the capacity, in addition to the need, for transformation. Finally, I outline the particular limitations of the present research project, and identify a range of opportunities for future and further investigation.

### **7.1 FROM CRITICAL ANALYSIS TO TRANSFORMATION**

As the present study demonstrates, material evidence and scientific facts reflect, not the world itself, but human investigations of the world, as negotiated through social, cultural, historical, and political processes. Moreover, the production and dissemination of technical knowledge requires resources in funding, personnel, training, facilities, and media access, and thus the patronage of wealthy and well-connected benefactors. Organizations and special interest groups naturally have incentive to provide such resources when they have a particular stake in the knowledge to be generated, or in how it might be implemented. They are especially inclined to contribute in cases where sponsorship would enable them to inform the

parameters of a research agenda, or play a role in communicating the relevance and potential applications of its results, as in several of the examples explored above. As such, scientific knowledge evolves largely in response to questions asked and information sought out by dominant institutions and groups, and in this way serves primarily powerful interests.

In light of the privileged authority afforded to scientific knowledge, in combination with the privileged access to its production by society's most elite, it is unsurprising that prominent interest groups across the political spectrum call for "evidence based decision-making" (CUE 2013, HSR&D 2013, Liebman 2013, Svancara et al. 2005, Taylor et al. 2005, Sherman et al. 2002). Leading professionals in some fields have even openly endorsed the idea of "decision-based evidence-making" (Schur et al. 2009), though others, particularly within the academy, caution against applicability requirements as a constraint on knowledge production (Slater 2012). Nonetheless, in the context of the ANWR debate, the pro- and anti-drilling lobbies are in agreement that a fact-based resolution is the end goal. Each lobby simply purports to have the facts on its side.

Two discrete pools of evidence regarding the development of ANWR are presented by Arctic Power and NRDC, respectively, each of which supports that lobby group's position in the drilling debate, and additionally serves its broader constituents and mission. Arctic Power, which represents the particular interests of the U.S. oil industry, draws its case in favor of ANWR development from a set of facts that is congruent with the industry's profit-driven agenda. Many of the studies the lobby group refers to have also been commissioned or funded by the oil industry. As such, they overwhelmingly address questions about the potential benefits of development, pertaining for example to revenues that might be generated, jobs that might be created, and the total quantity of oil that might be recovered.

Accordingly, these studies consider whether there are existing dilemmas or problems that ANWR development could help alleviate, for example around unemployment or the high cost of imported oil. Investigations into environmental impacts focus narrowly on aspects of non-competition between oil production and wildlife, the effect of which is to highlight potential compatibility rather than identify risk. The pool of data depicted by Arctic Power additionally addresses questions about the possible drawbacks of various hypothetical alternative scenarios to developing ANWR, and describes the most devastating of them in the greatest

detail. Hence, the oil lobby group's general representation of ANWR development, as corroborated by a substantial body of evidence, is overwhelmingly flattering and favorable. To permit drilling in the Arctic Refuge is depicted by Arctic Power as the obvious, even inevitable, decision.

On the other hand, the evidence sought out and disseminated by NRDC addresses another set of questions entirely, in line with the environmental lobby group's own mission "to safeguard the Earth"<sup>277</sup>. Several of these questions oppositely mirror the ones addressed in the evidence presented by Arctic Power, in the sense that they attend almost exclusively to the potential consequences, as opposed to benefits, of ANWR development. As such, they are heavily concentrated on the environmental hazards posed by petroleum operations, rather than on any benign aspects, and they describe the most severe impact scenarios with the greatest level of specificity.

Other studies referenced by NRDC investigate the associated burden to tax payers of developing ANWR, concluding that it would come at an excessively high price. The environmental lobby group additionally focuses on closely related issues of concern, such as global warming and the increasing rates of U.S. energy consumption, that ANWR development would fail to address or could even exacerbate. It further references studies that explore the opportunities and possibilities for 'green energy' production, were U.S. reliance on fossil fuels scaled back and the prospect of drilling in ANWR taken off the table. Through all of the above, the environmental lobby group paints an overall picture of ANWR development that is sobering and grim, and thoroughly substantiated by scientific evidence.

In between the discourses of Arctic Power and NRDC, and the facts they each relay, many questions remain unanswered. Importantly, these pertain to how the two representations of drilling in ANWR provided by each of the lobby groups can be overlaid. Knowledge of the frictions between development and ecosystem health, as well as of areas of compatibility between the two, are thus both required. Discussions aimed at fostering greater public understanding about U.S. energy policies and investments and their reverberating political as well as economic effects, both good and bad, is also essential. Most of all, a more comprehensive

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<sup>277</sup> Retrieved from <http://www.nrdc.org/about/mission.asp> on 14 October, 2013.

and contextualized survey of the material evidence is needed; one that involves careful consideration of how, and by whom, the guiding principles and basic goals of natural resource management are established, prior even to the identification or weighing of individual costs and benefits.

The neglected lines of inquiry described above indicate numerous erasures within the current drilling debate, none more fundamental than the range of relevant subjectivities and situated knowledges. Instead of incorporating or even acknowledging these, the ANWR conflict is marked by two distinct and purportedly objective presentations of fact. As a result, the American public, at whom these respective presentations are aimed, is denied the necessary context in which to adequately review and appropriately interpret the available scientific information. Even more significantly though, the capacity of the American public for the kind of informed decision-making and participation (Fraser 2005, Schlosberg 2004) on which the efficacy of democracy depends, is substantially hindered.

Given that Arctic Power describes a scenario of ANWR development in which all legitimate interests are exceptionally well served, while NRDC depicts a scenario of ANWR development in which they are all egregiously disserved, there is essentially no room, nor any need, for negotiation. There are no competing priorities to juggle or agendas to reconcile. Hence, the drilling debate becomes less a debate and more a test of loyalty, in which the public is forced to choose whose story to believe.

Though Arctic Power and NRDC present alarmingly disparate sets of facts from one another, and hold opposing positions in the drilling debate, the most valuable insights enabled by the critical analysis above speak to their underlying similarities. Namely, the discourses of these lobby groups together reflect privilege, influence, and the concentration of power, evident for example in the way they so closely mirror and mock one another. They reinforce the same dominant ideologies, notably around free-market capitalism, American exceptionalism, and technological optimism, albeit manifested in different ways. They together uphold *Materialism as Morality* by allowing facts to stand in for values, and by focusing on technical expertise without acknowledging the social institutions through which it is generated and legitimated. As such, the discourses of Arctic Power and NRDC not only serve powerful interests, but further embolden hegemonic structures and practices by obscuring power itself.



Considering how effectively the oil industry and environmental lobbies have appropriated the drilling debate, it could easily be presumed that a sensible and durable outcome must adequately appease each of these interest groups, and that a compromise between the two would best serve the needs of the broader public. In fact, a wave of partnership enterprises between industry and environment have emerged within the past decade, which attempt to unite their respective causes. The rapidly expanding corporate uptake of mechanisms that place an economic value on nature, for example, serves to align profit imperatives with conservation practices. Emissions trading, wetland banking (Robertson 2004), the leasing of fishing quotas (Mansfield 2007), and many other forms of 'market environmentalism' (Bakker 2005) aim to operationalize industry's espoused principles of privatization, incentivization, efficiency and competition, towards the aim of revitalizing and protecting the natural environment.

Such collaborations are commended by leaders from both business and conservation perspectives, from The World Bank to The Nature Conservancy, as being 'good for everyone' (Nature 2009, Pagiola et al. 2004) because they bridge the longstanding industry-environment divide. Yet, they disproportionately serve the most elite interests within each of these groups. This is primarily because profit generation and accumulation strategies, which disproportionately serve the wealthiest investors in traditional commodity markets, are similarly accessible only to individuals or groups with the greatest share of 'natural capital' (Costanza et al. 1997). As a result, these mutually backed initiatives facilitate a perpetual narrowing of control over natural resources to an increasingly select and privileged segment of the population (Robertson 2012, Smith 2007).

Many industry-environment partnerships additionally disempower small land owners, disadvantage small businesses, perpetuate disparities in health as well as wealth, and threaten non-hegemonic systems of governance, such as those of indigenous groups (Matulis 2012, Zhang and Pagiola 2011, Silva 2003). Even more troubling, they leave intact the technocratic, capitalist, and systemic socio-political structures that bare the greatest responsibility for both uneven economic development and environmental degradation (York and Clark 2010, Smith 2008).

Likewise, in the case of ANWR, a bilateral agreement between the oil industry and anti-drilling environmentalists could theoretically bring an end to the drilling debate as it is currently framed. However, such a compromise would inevitably fail to

address, and could even compound, the more persistent social justice implications of the current framing. This is because the ability of special interest groups to construct energy and environmental issues according to the experts they have designated and through the processes they have sanctioned, whether in opposition to or in partnership with one another, reflects a broken democracy: one in which resource disputes are fought out on behalf of citizens, families, workers, and communities, rather than among them.

The research presented here suggests the need for a transformative politics, which solicits the participation of the underrepresented majority in energy and environmental governance, and which challenges the hegemonic order through the recognition of alternative practices and counter-ideologies. These, for example, call for the decentralization of power from a few large corporations to many smaller firms and businesses, hail the importance of global cooperation as opposed to merely competition, support the involvement of local communities in small-scale energy production and the diversification of energy resources, and demand political decision-making by representational rather than commercial means<sup>278</sup>.

As laid out in the methodology section of this thesis, it is an explicit objective within Critical Discourse Analysis to not only identify, but to confront injustice, and to serve as an agent of social change. I have also described that my particular approach highlights and problematizes power, rather than features marginalized groups, although multiple examinations are needed and can indeed be mutually supportive. That said, I have no expectation that research such as this will persuade dominant groups to abandon their perpetually self-serving tactics or adopt more inclusive practices. They would have no incentive, after all, to relinquish the influence they wield, or to destabilize the very ideologies and political structures that have enabled their rise to prominence. The ability of these groups to prevail, however, depends on the efficacy of their discourses, and thus on the actions and views of the wider public. Herein lies the capacity for transformation.

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<sup>278</sup>Recent demonstrations in the US by both the Tea Party movement, on the political right, and the Occupy Wall Street movement, on the political left, reflect widespread frustration about wealth disparities, the concentration of power, and the disenfranchisement of the electorate by political elites.

A dialectical understanding of the relationship between power and subordination is fundamental to deconstructing the hegemonic materialist framing of the drilling debate and addressing the associated social justice implications. It is critical to acknowledge, for instance, that Arctic Power and NRDC not only enjoy a disproportionate amount of political leverage, but that the influence they hold has been siphoned away from others. Namely, through a phenomenon analogous to what David Harvey describes as “accumulation by dispossession” (Harvey 2003), these lobby groups have disenfranchised both the producers and end-users of scientific knowledge by positioning themselves as intermediaries between the two.

The public is disempowered when its access to, and solicitation of, technical information is mediated. Similarly, the scientific community is undermined by processes that remove them from the practical applications of the knowledge they generate, and from the social imperatives that might enhance and guide their investigations. The work of scientists is also made more difficult by the reification of science as Truth, which holds practitioners to an impossible standard of objectivity, ahistoricity, and inevitability. Further, the public disillusionment that results when such unrealistic expectations are not met leads to distrust in the institution of science and the devaluation of empirical evidence, and sometimes also political fallout, as in the case of the Climategate scandal (Ravetz 2011).

Critical reflection on the above problematizes the roles of Arctic Power and NRDC as scientific intermediaries, and calls for scientists and the general public to communicate more effectively and directly with one another. This implies substantial changes in perspective as well as procedure on all parts. Hence, in addition to examining the relationship between powerful and subaltern interests, the transformative justice envisioned here draws on four related dialectics, which I describe below.

First of all, the hegemonic materialist framing of the ANWR drilling debate by powerful stakeholder groups legitimizes expert knowledge while undermining lay and local knowledges. Both the Iñupiat and Gwich'in, for example, hold intimate understandings of ANWR – its resources, wildlife, climate, and fluctuations over time – but to the extent that these groups are visible within the drilling debate at all, it is through their appeals to indigenous land rights and the preservation of cultural traditions, as opposed to their unique and extensive knowledge of the region. Hence, the dominant evidence-based frame relies on commonly accepted

categorical distinctions between expert and lay understanding, which are themselves products of institutional organization and social hierarchy. Beyond dismantling the former and elevating the latter, transformative justice calls the very notion of expertise into question. It considers proficiency in relation to the particular tasks, inquiries, and challenges at hand, and the experiences or skillsets required to meet them, rather than relying on generic sets of credentials or establishment-awarded certifications as qualifying indicators.

Secondly, transformative justice embraces a dialectic between knowns and unknowns, which serves as a reminder that technical knowledge is fluid, partial, and tenuous, rather than absolute. Accordingly, it highlights the interdependent relationship between individual parts and the collective whole. A recognition of the dynamism and uncertainty inherent in the production of scientific understanding urges us to consider each new piece of evidence within the broader context of ongoing investigations about the world, and advocates for the continual revisiting and reanalysis of data previously thought to be conclusive.

Third, a dialectical approach to the relationship between abstract concepts and specific circumstances is imperative. Rather than thinking of the ANWR drilling debate as a universal issue with a singularly appropriate solution, we need to acknowledge that it holds very particular implications, including risks and concerns as well as potential benefits, for its various stakeholder groups. While it is true that certain local or other situated perspectives are noted by Arctic Power and NRDC, transformative justice urges the integration of positionality at a much more fundamental level. It makes space for the range and diversity of stakeholder groups in the initial construction of challenges and opportunities, and in the framing of discussions about how to navigate them. It also entails not only embracing multiple ways of knowing, but developing new tools for sharing knowledge across cultures and communities.

Fourth and finally, transformative justice suggests a need for the reconciliation of facts with values, which are confined to discrete realms by the hegemonic materialist framing of the ANWR drilling debate and other high-stakes conflicts. Rather than wring society and politics out of science, as positivist practices strive to do, knowledge producers should be encouraged and equipped to recognize, reflect on, and to openly address the historical underpinnings and political relevance as well as social implications of the work they do. A standard of transparency,

reflexivity, and answerability should direct all activities around the generation and dissemination of data, from the initial proposal and funding of a study to the implementation of its results.

This responsibility currently falls to sociologists of science, as intermediaries ourselves, but could be more effectively taken up between the wider public and scientists directly. Citizens and their respective priorities and concerns could then inform the direction of scientific research, and also share in the interpretation and uptake of the technical information that shapes our policies, informs our practices, influences our priorities and perspectives, and profoundly impacts our daily lives.

The above paragraphs describe the intended contributions of this research to non-academic groups, such as producers and consumers of scientific knowledge, social movement actors, policymakers, voters, workers within conservation as well as industry, indigenous groups, and decision-makers across the public, private, and non-profit sectors. At the same time this study supports ongoing scholarship in a number of academic disciplines, most notably sociology, including its subdisciplines of environmental sociology, the sociology of science, and the sociology of knowledge. This research also contributes significantly to the evolving fields of critical discourse analysis and critical inquiry more broadly, by exposing certain *modus operandi* of neoliberal and other hegemonic institutions. Additionally, this study offers insights to human geography, particularly where it intersects with political ecology and political theory, through its conceptual development and promotion of social as well as environmental justice. Further, it is my hope that the present research will inform scholarship across the natural and physical sciences, whose practitioners are, at the same time, theorists.

In sum, endeavors to explore and explain the material world cannot be substituted for discussions of morality, entitlement, and obligation. An enhanced public understanding of science, coupled with a more relevant and accountable scientific establishment, is needed not only in the interest of participatory conflict resolution, but towards a more informed and engaged electorate, more responsible institutions and responsive industries, more representative governments, and a more effective democracy. Having laid out this transformative vision, the remaining section of this thesis acknowledges certain limitations of the analysis presented here, and outlines several opportunities for future and further research.

## **7.2 LIMITATIONS OF THE PRESENT STUDY & FURTHER RESEARCH OPPORTUNITIES**

A noteworthy omission from the present analysis of the ANWR drilling debate is the role of the media, which substantially contributes to the hegemonic framing of the debate. It is also true that, like lobby groups, prominent media outlets are found at both ends of the political spectrum, and can be seen to engage in, rather than merely report the status of, the drilling debate itself. Many privately-owned newspapers and cable television networks in particular, can be traced to the same powerful interests that fuel the drilling debate. Popular news conduits, internet stations, and social media platforms also increasingly inform all topics of public debate. The media thus represents an important dynamic within political controversy generally and the ANWR conflict specifically. However it is one that lies beyond the scope of this particular study and therefore merits its own investigation.

Another important point is that this thesis represents a macrosociological critical investigation in that it is primarily interested in revealing systemic injustice and the institutionalized processes of normalization that conceal and perpetuate it, as opposed to identifying individual culprits within structures of power to carry the blame. A consequence of this methodological framework, however, is that the roles of individuals who serve, and are served by, powerful regimes are excluded from the analysis provided here.

I do not, for example, explore areas of dissimilarity between the perspectives of top-level oil industry executives, or consider discrepancies between the critiques of fossil fuel development offered by various members of the NRDC Board of Trustees. To probe the experiences and actions of these individuals would undoubtedly generate a complementary understanding about organizational diversity in addition to cohesion, and about the motivations and incentives that drive individuals, on a personal level, to commit their own time and energy, and in many cases their entire professional careers, to a particular heavyweight cause.

A second and related consequence of the macrosociological approach chosen for this study is that it neglects individuals and subgroups within the already underrepresented majority. Extremely valuable insights could be gained, for instance, through consideration of, and direct engagement with, members of the Iñupiat and Gwich'in indigenous communities. These studies could take the form of ethnographic or even dialogical investigations, which draw on the potential for local

experiences and understanding to inform theoretical work, and also develop the capacity of academic scholarship to empower communities and articulate social movements.

The present research further carves out opportunities to explore the ANWR conflict through the lenses of other Alaskans, and of the residents of Canada's Yukon territory, which shares a political border with the Refuge. This study would also be enhanced by a deeper understanding of the experiences of laborers and labor unions, war veterans, the working poor, the unemployed, people of color, small business owners, the engineers and manufacturers of renewable energy technologies, and the vast range of other stakeholders and intersecting stakeholder groups. Given the breadth of issues and ideologies implicated in the ANWR conflict, and the reach of their impacts, the drilling debate arguably carries consequences for the entire global population.

Having uncovered multiple layers as well as scales of inequity and injustice embedded within the U.S. energy policy status quo, the work presented here suggests the need to explore proposed alternatives through the same lens of scrutiny. Particularly given the culture of technological optimism that drives powerful interests across the political spectrum, a significant opportunity for future research involves unpacking the various social and environmental justice implications of renewable energy technologies. This would challenge greener forms of energy production to avoid not only environmental degradation of the kinds attributed to the fossil fuel industry, but also the societal failings linked to monopolization, political favoritism, and the concentration of power.

Finally, I would be remiss not to acknowledge that, since the mid-2000s, the national conversation about U.S. energy has taken a significant turn. In fact, since I began researching the ANWR debate, the specific issue of domestic oil drilling has been overshadowed by a series of conflicts between industry and environmentalists over the recovery of unconventional oil and gas reserves. A more pressing debate than ANWR, for instance, pertains to the partially-completed construction of the Keystone Pipeline system, which is intended to transport petroleum deposits from oil sands in Alberta, Canada and the central United States, to oil refineries in Texas.

Also contentious is the recent surge in hydraulic fracturing across the United States. The practice of "fracking", as it is commonly known, has led to a natural gas boom

and a flurry of associated economic activity. It is hailed by industry proponents as environmentally friendly because the burning of natural gas releases fewer harmful emissions than the burning of oil. It is also a key component of proposed plans for “North American energy independence”, as offered, for example, by the Republican challenger to President Obama in the 2012 presidential election (Rucker 2012). Fracking is condemned by environmentalists, however, who cite ground water contamination, air quality damage, chemical spillage, and a range of health risks as associated consequences (Weinhold 2012).

Though the ANWR drilling debate has taken a backseat to these seemingly more urgent conflicts, it has by no means become irrelevant. In fact, the prolonged and more deeply entrenched U.S. dependence on fossil fuels enabled by renewed investments in oil and gas production, would indicate that the ANWR debate is bound to resurface. Worryingly, when it does, the circumstances are likely to be even more dire, as it is widely expected both that U.S. energy consumption will continue to steadily increase, and that the effects of climate change will be felt more acutely with time (EIA 2013a, IPCC 2007).

It is also true that the underlying ideological issues raised in this thesis, for example around free-market capitalism, technological optimism, nationalism, and economic growth, pertain equally to the controversies over unconventional oil and gas production (see, for example, Finewood and Stroup 2012). The major players within these conflicts rely on the same dichotomies, though the dividing lines are variously drawn, between facts and myths, balance and extremism, public and private sector roles, and between ‘us’ and ‘them’, to push their respective agendas forward.

Rather than weighing and ultimately having to choose between politically opposed but equally empowered agendas, transformative justice calls for a remaking of the conversation. The critical framework of this thesis identifies environmental and energy issues, from the very point at which they are discursively constructed and thus situated within the socio-political landscape, as fundamentally human issues. It thus urges that the starting point of any debate be the people who are implicated, not as considerations, but as equal participants in the discussion (Schlosberg 2004, 1999; see also the ‘all-affected principle’ in Fraser 2005). This would enable reflection on a diversity of relevant investments and sensitivities, and ensure inclusion of the voices of the stakeholders who claim them.



Yet still before addressing questions about how caribou and infrastructure interact, which factors affect the price of oil, or at what volume methane in groundwater should be considered unsafe, transformative justice encourages the conspicuous examination of what we value as our collective natural heritage, and how we choose to value it. In the case of ANWR, petroleum energy and wilderness preservation would be considered amongst a range of other priorities, rather than presented as an ultimatum. Further, a management system devised through these means would be aimed at the equitable sharing of natural resources and their various benefits across the population, and the minimization of environmental degradation overall.

Transformative justice requires deliberation on the roles of public, private, and other social institutions in environmental decision-making (Dryzek 2002). It begs questions about where and how the involvement of private industry can be most beneficial, and about the measure of compensation that would accurately reflect its utility to society. It scrutinizes environmental regulations and notions of stewardship, not in relation to past or current practices, but in the context of common desires for health, welfare, prosperity and fulfillment.

Finally, the transformative justice envisioned here reconsiders many of the assumptions taken for granted by dominant industry and environmental groups alike, for instance that economic growth, which depends on steadily increasing rates of production and consumption, is even compatible with environmental sustainability (Elkington 2010). Similarly, it problematizes the hegemonic capitalist refrain that profit imperatives and unencumbered competition ensure efficiency, by exploring precisely which processes are made more efficient. Most importantly, it challenges new technologies, enterprises, and scientific investigations to address the needs of citizens and communities, as opposed to the other way around.

More than its contribution towards reaching a resolution of the ANWR conflict specifically, the value of this research lies in its deconstruction of the hegemonic framing of so many contentious and high-profile political issues in terms of *Materialism as Morality*. Along these lines, I argue that the drilling debate is fuelled more by competing claims to legitimacy and power than by divergent perspectives on energy or the environment. Coincidentally, my hope is that the critical analysis provided here will foster a greater collective consciousness of the entwined relationships between technical understandings of the material world and situated constructions of morality, such that neither be allowed to obfuscate the other.

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## APPENDIX A:

### LIST OF CITED ARCTIC POWER URLS

Title	URL
Alan Caruba Reviews Recent Insights into Peak Oil	<a href="http://www.anwr.org/Politics/Alan-Caruba-Reviews-Recent-Insights-into-Peak-Oil.php">http://www.anwr.org/Politics/Alan-Caruba-Reviews-Recent-Insights-into-Peak-Oil.php</a>
Alaska Crude Oil Prices Hit Record Highs	<a href="http://www.anwr.org/Latest-News/Alaska-Crude-Oil-Prices-Hit-Record-Highs.php">http://www.anwr.org/Latest-News/Alaska-Crude-Oil-Prices-Hit-Record-Highs.php</a>
Alaskan Groups Sue over Polar Bears - Barrow	<a href="http://www.anwr.org/Latest-News/Alaskan-Groups-Sue-over-Polar-Bears-Barrow.php">http://www.anwr.org/Latest-News/Alaskan-Groups-Sue-over-Polar-Bears-Barrow.php</a>
Alaskans Strongly Support ANWR Development	<a href="http://www.anwr.org/People/Alaskans-Strongly-Support-ANWR-Development.php">http://www.anwr.org/People/Alaskans-Strongly-Support-ANWR-Development.php</a>
America's Energy Insurance Policy	<a href="http://www.anwr.org/features/natsecure.htm">http://www.anwr.org/features/natsecure.htm</a>
ANWR Creates Jobs and Revenue for Every State	<a href="http://www.anwr.org/images/pdf/63008USAjobsmap.pdf">http://www.anwr.org/images/pdf/63008USAjobsmap.pdf</a>
ANWR Information Brief: Employment	<a href="http://www.anwr.org/features/pdfs/employment-facts.pdf">http://www.anwr.org/features/pdfs/employment-facts.pdf</a>
ANWR Provision Starts Congressional Journey	<a href="http://www.anwr.org/Latest-News/ANWR-Provision-Starts-Congressional-Journey.php">http://www.anwr.org/Latest-News/ANWR-Provision-Starts-Congressional-Journey.php</a>
ANWR Resources and Information	<a href="http://www.anwr.org/Resources.php">http://www.anwr.org/Resources.php</a>
Arctic National Wildlife Refuge: the issue	<a href="http://www.anwr.org/ANWR-Basics/Arctic-National-Wildlife-Refuge-the-issue.php">http://www.anwr.org/ANWR-Basics/Arctic-National-Wildlife-Refuge-the-issue.php</a>
Arctic Power Back in Washington	<a href="http://www.anwr.org/Politics/Arctic-Power-Back-in-Washington.php">http://www.anwr.org/Politics/Arctic-Power-Back-in-Washington.php</a>
Arctic Power Supports 1002 Coastal Plain Announcement	<a href="http://www.anwr.org/Headlines/Arctic-Power-Supports-1002-Coastal-Plain-Announcement.php">http://www.anwr.org/Headlines/Arctic-Power-Supports-1002-Coastal-Plain-Announcement.php</a>
Begich Comes out Fighting for ANWR	<a href="http://www.anwr.org/Politics/Begich-Comes-out-Fighting-for-ANWR.php">http://www.anwr.org/Politics/Begich-Comes-out-Fighting-for-ANWR.php</a>
BP Proposes Development With No Pad, Flexible Pipeline	<a href="http://www.anwr.org/archives/bp_proposes_development_with_no_pad_flexible_pipeline.php">http://www.anwr.org/archives/bp_proposes_development_with_no_pad_flexible_pipeline.php</a>
C.O.R.E Rallies for ANWR	<a href="http://www.anwr.org/Headlines/C.O.R.E-Rallies-for-ANWR.php">http://www.anwr.org/Headlines/C.O.R.E-Rallies-for-ANWR.php</a>
Caribou in the Region	<a href="http://www.anwr.org/Background/Caribou-in-the-Region.php">http://www.anwr.org/Background/Caribou-in-the-Region.php</a>
Committee Passes Bill to Open 3% of ANWR	<a href="http://www.anwr.org/Latest-News/Committee-Passes-Bill-to-Open-3-of-ANWR.php">http://www.anwr.org/Latest-News/Committee-Passes-Bill-to-Open-3-of-ANWR.php</a>

Title	URL
Congress: Testimony of Roger C. Herrera to the House Committee on Resources	<a href="http://www.anwr.org/features/politics/congress.htm">http://www.anwr.org/features/politics/congress.htm</a>
Do the Caribou really Care?	<a href="http://www.anwr.org/features/pdfs/caribou-facts.pdf">http://www.anwr.org/features/pdfs/caribou-facts.pdf</a>
Drill here. Drill now. Drill ANWR.	<a href="http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php">http://www.anwr.org/Latest-News/Drill-here.-Drill-now.-Drill-ANWR.php</a>
Drilling Technology and Innovations Continue	<a href="http://www.anwr.org/Technology/Drilling-Technology-and-Innovations-Continue.php">http://www.anwr.org/Technology/Drilling-Technology-and-Innovations-Continue.php</a>
Faces of ANWR: Caribou	<a href="http://www.anwr.org/features/pdfs/faces-caribou.pdf">http://www.anwr.org/features/pdfs/faces-caribou.pdf</a>
Faces of ANWR: Organized Labor	<a href="http://www.anwr.org/features/pdfs/faces-labor.pdf">http://www.anwr.org/features/pdfs/faces-labor.pdf</a>
Faces of ANWR: Veterans	<a href="http://www.anwr.org/features/pdfs/faces-veteran.pdf">http://www.anwr.org/features/pdfs/faces-veteran.pdf</a>
Foreign Oil GOOD, Alaskan Oil BAD- The "SPR" Effect	<a href="http://www.anwr.org/Latest-News/Foreign-Oil-GOOD-Alaskan-Oil-BAD-The-SPR-Effect.php">http://www.anwr.org/Latest-News/Foreign-Oil-GOOD-Alaskan-Oil-BAD-The-SPR-Effect.php</a>
Hastings and Boehner Push ANWR	<a href="http://www.anwr.org/Politics/Hastings-and-Boehner-Push-ANWR.php">http://www.anwr.org/Politics/Hastings-and-Boehner-Push-ANWR.php</a>
How Much Oil is in ANWR?	<a href="http://www.anwr.org/Background/How-much-oil-is-in-ANWR.php">http://www.anwr.org/Background/How-much-oil-is-in-ANWR.php</a>
Jay Leno on drilling in ANWR	<a href="http://www.anwr.org/Video/Jay-Leno-on-drilling-in-ANWR.php">http://www.anwr.org/Video/Jay-Leno-on-drilling-in-ANWR.php</a>
Making the Case for ANWR	<a href="http://www.anwr.org/Background/Making-the-Case-for-ANWR.php">http://www.anwr.org/Background/Making-the-Case-for-ANWR.php</a>
Making the Case for ANWR Development	<a href="http://www.anwr.org/case.htm">http://www.anwr.org/case.htm</a>
Murkowski offers ANWR/OCS to Cap & Trade Bill	<a href="http://www.anwr.org/Politics/Murkowski-offers-ANWR/OCS-to-Cap-Trade-Bill.php">http://www.anwr.org/Politics/Murkowski-offers-ANWR/OCS-to-Cap-Trade-Bill.php</a>
National Security Demands More Diverse Energy Supplies	<a href="http://www.anwr.org/features/issues/energy-nat.htm">http://www.anwr.org/features/issues/energy-nat.htm</a>
New Standard Set with Double-hulled Double-screw Tankers	<a href="http://www.anwr.org/archives/new_standard_set_with_doublehulled_doublecrew_tankers_.php">http://www.anwr.org/archives/new_standard_set_with_doublehulled_doublecrew_tankers_.php</a>
OIL vs. WILDLIFE: Views on the ANWR Caribou Issue	<a href="http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf">http://www.anwr.org/features/pdfs/RangeMagANWRpiece.pdf</a>
People	<a href="http://www.anwr.org/People/">http://www.anwr.org/People/</a>
Polar Bear Listing to Affect ANWR and Alaskan Arctic	<a href="http://www.anwr.org/Latest-News/Polar-Bear-Listing-to-Affect-ANWR-and-Alaskan-Arctic.php">http://www.anwr.org/Latest-News/Polar-Bear-Listing-to-Affect-ANWR-and-Alaskan-Arctic.php</a>
PowerPoint on ANWR	<a href="http://www.anwr.org/images/pdf/2011_PowerPt_on_ANWR.pdf">http://www.anwr.org/images/pdf/2011_PowerPt_on_ANWR.pdf</a>
Putting it in Perspective	<a href="http://www.anwr.org/images/pdf/63008ANWRperspectivemap.pdf">http://www.anwr.org/images/pdf/63008ANWRperspectivemap.pdf</a>
Reliable, Affordable Energy: An indispensable but neglected civil right	<a href="http://www.anwr.org/images/pdf/InnisspeechWisfinal.pdf">http://www.anwr.org/images/pdf/InnisspeechWisfinal.pdf</a>

Title	URL
Restriction, Regulation and Global Warming Taxes	<a href="http://www.anwr.org/images/pdf/GlobalWarminghr2539.pdf">http://www.anwr.org/images/pdf/GlobalWarminghr2539.pdf</a>
Roy Innis on American Energy and ANWR	<a href="http://www.anwr.org/Latest-News/Roy-Innis-on-American-Energy-and-ANWR.php">http://www.anwr.org/Latest-News/Roy-Innis-on-American-Energy-and-ANWR.php</a>
Seventh ANWR Bill Rolls into House	<a href="http://www.anwr.org/Politics/Seventh-ANWR-Bill-Rolls-into-House.php">http://www.anwr.org/Politics/Seventh-ANWR-Bill-Rolls-into-House.php</a>
Ship Escort/Response Vessel System (SERVS)	<a href="http://www.anwr.org/archives/ship_escortresponse_vessel_system_servs_.php">http://www.anwr.org/archives/ship_escortresponse_vessel_system_servs_.php</a>
Small Footprint	<a href="http://www.anwr.org/archives/small_footprint.php">http://www.anwr.org/archives/small_footprint.php</a>
Technology	<a href="http://www.anwr.org/techno/techno.htm">http://www.anwr.org/techno/techno.htm</a>
Technology (2)	<a href="http://www.anwr.org/Technology/">http://www.anwr.org/Technology/</a>
The Gas Prices We Deserve	<a href="http://www.anwr.org/Latest-News/The-Gas-Prices-We-Deserve.php">http://www.anwr.org/Latest-News/The-Gas-Prices-We-Deserve.php</a>
The Reality of the Oil Tax Subsidies Debate	<a href="http://www.anwr.org/Latest-News/The-Reality-of-the-Oil-Tax-Subsidies-Debate.php">http://www.anwr.org/Latest-News/The-Reality-of-the-Oil-Tax-Subsidies-Debate.php</a>
The Value of 3D Seismic	<a href="http://www.anwr.org/archives/the_value_of_3d_seismic_.php">http://www.anwr.org/archives/the_value_of_3d_seismic_.php</a>
There is a Job that Needs to be done, that we Expect to be done	<a href="http://www.anwr.org/Headlines/There-is-a-Job-that-Needs-to-be-Done-That-we-Expect-to-be-Done.php">http://www.anwr.org/Headlines/There-is-a-Job-that-Needs-to-be-Done-That-we-Expect-to-be-Done.php</a>
Today's drilling leaves a small footprint	<a href="http://www.anwr.org/Technology/Today-s-drilling-leaves-a-small-footprint.php">http://www.anwr.org/Technology/Today-s-drilling-leaves-a-small-footprint.php</a>
Too Much Imported Oil: Bad for the Economy	<a href="http://www.anwr.org/Background/Making-the-Case-for-ANWR.php">http://www.anwr.org/Background/Making-the-Case-for-ANWR.php</a>
Top ten reasons to support ANWR development	<a href="http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php">http://www.anwr.org/ANWR-Basics/Top-ten-reasons-to-support-ANWR-development.php</a>
Weather and Climate Conditions	<a href="http://www.anwr.org/Background/Weather-and-Climate-Conditions.php">http://www.anwr.org/Background/Weather-and-Climate-Conditions.php</a>
What is ANWR and Where is it?	<a href="http://www.anwr.org/ANWR-Basics/What-is-ANWR-and-where-is-it.php">http://www.anwr.org/ANWR-Basics/What-is-ANWR-and-where-is-it.php</a>
Which One is the Real ANWR?	<a href="http://www.anwr.org/features/pdfs/realanwr-page1.pdf">http://www.anwr.org/features/pdfs/realanwr-page1.pdf</a>
Wildlife Protection	<a href="http://www.anwr.org/features/issues/wildlife-protect.htm">http://www.anwr.org/features/issues/wildlife-protect.htm</a>
Worried about Fuel Prices? ANWR Equals 30 Years of Saudi Oil	<a href="http://www.anwr.org/OCS/Worried-About-Fuel-Prices-ANWR-Equals-30-Years-of-Saudi-Oil.php">http://www.anwr.org/OCS/Worried-About-Fuel-Prices-ANWR-Equals-30-Years-of-Saudi-Oil.php</a>

## APPENDIX B:

### LIST OF CITED N.R.D.C. URLS

Title	URL
6 Things We Can Do in the Face of Soaring Gas Prices	<a href="http://switchboard.nrdc.org/blogs/fbeinecke/6_things_we_can_do_in_the_face.html">http://switchboard.nrdc.org/blogs/fbeinecke/6_things_we_can_do_in_the_face.html</a>
Arctic Refuge Land Grab	<a href="http://www.nrdc.org/land/wilderness/arcticmap_2000acres.pdf">http://www.nrdc.org/land/wilderness/arcticmap_2000acres.pdf</a>
As Gas Prices Hit New Highs, NRDC Maps Path to Oil Security	<a href="http://www.nrdc.org/media/pressreleases/030318.asp">http://www.nrdc.org/media/pressreleases/030318.asp</a>
Beyond Oil: The Oil Industry and Partisanship	<a href="http://www.onearth.org/article/beyond-oil-the-oil-industry-and-partisanship">http://www.onearth.org/article/beyond-oil-the-oil-industry-and-partisanship</a>
Big Oil's Monopoly Money	<a href="http://switchboard.nrdc.org/blogs/plehner/what_will_it_take_to_eliminate.html">http://switchboard.nrdc.org/blogs/plehner/what_will_it_take_to_eliminate.html</a>
California's Kicking the Oil Habit	<a href="http://switchboard.nrdc.org/blogs/jhorner/californias_kicking_the_oil_ha.html">http://switchboard.nrdc.org/blogs/jhorner/californias_kicking_the_oil_ha.html</a>
Can We Save the Melting Arctic Before It's Too Late? Yes, We Can	<a href="http://www.onearth.org/article/can-we-save-the-melting-arctic-before-its-too-late-yes-we-can">http://www.onearth.org/article/can-we-save-the-melting-arctic-before-its-too-late-yes-we-can</a>
Center for Market Innovation: Areas of Focus	<a href="http://www.nrdc.org/greenbusiness/cmi/focus.asp">http://www.nrdc.org/greenbusiness/cmi/focus.asp</a>
Center for Market Innovation: Business Plan	<a href="http://www.nrdc.org/greenbusiness/cmi/files/CMI-BusinessPlan.pdf">http://www.nrdc.org/greenbusiness/cmi/files/CMI-BusinessPlan.pdf</a>
Center for Market Innovation: Implementing Profitable Solutions to Environmental Challenges	<a href="http://www.nrdc.org/greenbusiness/cmi/">http://www.nrdc.org/greenbusiness/cmi/</a>
Climate Change Threatens Health	<a href="http://www.nrdc.org/health/climate/default.asp">http://www.nrdc.org/health/climate/default.asp</a>
Domestic Oil Drilling: Still Not a Solution to Rising Gas Prices	<a href="http://www.nrdc.org/energy/oildrilling/">http://www.nrdc.org/energy/oildrilling/</a>
Drilling in the Arctic Refuge: The 2,000-Acre Footprint Myth	<a href="http://www.nrdc.org/land/wilderness/arch/farc2000.asp">http://www.nrdc.org/land/wilderness/arch/farc2000.asp</a>
Environmental Risks with Proposed Offshore Oil and Gas Development off Alaska's North Slope	<a href="http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf">http://www.nrdc.org/land/alaska/files/drilling-off-north-slope-IP.pdf</a>
Explore the Arctic: Photo Slide Show	<a href="http://www.nrdc.org/land/wilderness/arctic/9.html">http://www.nrdc.org/land/wilderness/arctic/9.html</a>
Fuel Facts: Governments Should Phase Out Fossil Fuel Subsidies or Risk Lower Economic Growth, Delayed Investment in Clean Energy and Unnecessary Climate Change Pollution	<a href="http://www.nrdc.org/energy/files/fossilfuel4.pdf">http://www.nrdc.org/energy/files/fossilfuel4.pdf</a>
Fuelish Claims	<a href="http://www.nrdc.org/land/wilderness/arch/farcjobs.asp">http://www.nrdc.org/land/wilderness/arch/farcjobs.asp</a>
Global Warming Basics: What it is, How it's Caused, and What Needs to be Done to Stop it	<a href="http://www.nrdc.org/globalwarming/f101.asp">http://www.nrdc.org/globalwarming/f101.asp</a>

Title	URL
Global Warming Puts the Arctic on Thin Ice	<a href="http://www.nrdc.org/globalwarming/qthinice.asp">http://www.nrdc.org/globalwarming/qthinice.asp</a>
Global Warming Science: An Annotated Bibliography	<a href="http://www.nrdc.org/globalwarming/science/">http://www.nrdc.org/globalwarming/science/</a>
High Gas Prices: Supply, Demand and the Oil Industry's Monopoly on Transportation	<a href="http://www.nrdc.org/energy/gasprices/">http://www.nrdc.org/energy/gasprices/</a>
Letter to Congress from NRDC President and Leaders of 11 other Environmental Groups (August 9, 2011)	<a href="http://docs.nrdc.org/legislation/files/leg_11080901a.pdf">http://docs.nrdc.org/legislation/files/leg_11080901a.pdf</a>
MAP-21: Forward Progress from Senators Boxer and Inhofe	<a href="http://switchboard.nrdc.org/blogs/dlovaa/s/map-21_forward_progress_from_s.html">http://switchboard.nrdc.org/blogs/dlovaa/s/map-21_forward_progress_from_s.html</a>
National Security & Oil: "Dangerous Addiction" Report Outlines Risks of Import Dependence, Offers Roadmap to Save 5 Million Barrels Per Day	<a href="http://lobby.la.psu.edu/_107th/126_CAFE_Standards_2/Organizational_Statements/NRDC/NRDC_011602.htm">http://lobby.la.psu.edu/_107th/126_CAFE_Standards_2/Organizational_Statements/NRDC/NRDC_011602.htm</a>
NRDC Denounces House Energy Bill as the 'More Pollution Solution'	<a href="http://www.nrdc.org/media/pressReleases/010801b.asp">http://www.nrdc.org/media/pressReleases/010801b.asp</a>
NRDC Experts: Climate Change	<a href="http://www.nrdc.org/about/staff/climate-change-experts.asp">http://www.nrdc.org/about/staff/climate-change-experts.asp</a>
Oil Development Damages Air, Water, and Wildlife	<a href="http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.asp">http://www.nrdc.org/land/wilderness/arcticrefuge/facts2.asp</a>
OnEarth Magazine: A Survival Guide for the Planet	<a href="http://www.onearth.org/about">http://www.onearth.org/about</a>
OnEarth Magazine: Book Review of Caribou Rising	<a href="http://www.nrdc.org/onearth/05win/reviews.asp">http://www.nrdc.org/onearth/05win/reviews.asp</a>
Polar Bear SOS!	<a href="http://www.savebiogems.org/polar-bear-sos/">http://www.savebiogems.org/polar-bear-sos/</a>
Protecting Life on the Coastal Plain	<a href="http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp">http://www.nrdc.org/land/wilderness/arcticrefuge/facts1.asp</a>
Reference/Links: Global Warming	<a href="http://www.nrdc.org/reference/topics/global.asp">http://www.nrdc.org/reference/topics/global.asp</a>
Responsible Debt Reduction Should Start With Cuts to Wasteful Subsidies	<a href="http://switchboard.nrdc.org/blogs/fbeinecke/responsible_debt_reduction_sho.html">http://switchboard.nrdc.org/blogs/fbeinecke/responsible_debt_reduction_sho.html</a>
Running on Empty Tour Is Empty of Facts, Full of Misinformation	<a href="http://switchboard.nrdc.org/blogs/dlovaa/s/running_on_empty_tour_is_empty.html">http://switchboard.nrdc.org/blogs/dlovaa/s/running_on_empty_tour_is_empty.html</a>
Save BioGems: Defend Wildlife and Wildlands	<a href="http://www.savebiogems.org/stop-shell/">http://www.savebiogems.org/stop-shell/</a>
Supreme Court says No to Exxon-Science	<a href="http://switchboard.nrdc.org/blogs/jsass/supreme_court_says_no_to_exxon.html">http://switchboard.nrdc.org/blogs/jsass/supreme_court_says_no_to_exxon.html</a>
The Bush Record: The Arctic National Wildlife Refuge	<a href="http://www.nrdc.org/bushrecord/wildlife_arctic.asp">http://www.nrdc.org/bushrecord/wildlife_arctic.asp</a>
The Bush Record: The Junk Science of George W. Bush	<a href="http://www.nrdc.org/bushrecord/science/rfk.asp">http://www.nrdc.org/bushrecord/science/rfk.asp</a>
The Consequences of Global Warming	<a href="http://www.nrdc.org/globalwarming/fcons.asp">http://www.nrdc.org/globalwarming/fcons.asp</a>

Title	URL
The High Cost Of Doing Nothing	<a href="http://www.nrdc.org/globalwarming/climate-disruption-tax.asp">http://www.nrdc.org/globalwarming/climate-disruption-tax.asp</a>
The Road to Recovery: Investing in a New Transportation Policy	<a href="http://www.nrdc.org/energy/transportation/files/roadtorecovery.pdf">http://www.nrdc.org/energy/transportation/files/roadtorecovery.pdf</a>
The Western Arctic: Protecting America's Arctic	<a href="http://www.nrdc.org/land/wilderness/alaska/warctic.pdf">http://www.nrdc.org/land/wilderness/alaska/warctic.pdf</a>
Transition to Green: Leading the Way to a Healthy Environment, a Green Economy, and a Sustainable Future. Environmental Transition Recommendations for the Obama Administration	<a href="http://docs.nrdc.org/legislation/files/leg_08112401a.pdf">http://docs.nrdc.org/legislation/files/leg_08112401a.pdf</a>
Why Trash an American Treasure for a Tiny Percentage of our Oil Needs?	<a href="http://www.nrdc.org/land/wilderness/arctic.asp">http://www.nrdc.org/land/wilderness/arctic.asp</a>



## APPENDIX C:

### A PERSONAL REFLECTION

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Having taken on the ‘reflexivity project’ (discussed in chapter three), including its commitments to transparency and critical self-reflection, I offer a few comments here about my personal investment in the present research. These are in complement to the retroductive, first-person narrative of which this entire thesis is composed, and through which I take accountability for the particular questions I raise, the situated knowledge I produce, and the implications of my claims.

I suppose it’s fair to describe that I once viewed opposition to drilling in ANWR as the more informed and socially responsible position, and support for drilling as part of a shortsighted and self-interested agenda. When I first encountered the debate many years ago, it was from a relatively mainstream liberal and middle-class<sup>279</sup> environmentalist perspective, not too different from the one I attribute to the Natural Resources Defense Council. I have always been an outdoor enthusiast, animal lover, and amateur naturalist. A majority of my volunteer and professional experiences have also been in the fields of environmental education, restoration, and/or conservation.

I have worked closely with ecologists, biologists, physical geographers and various other natural scientists, all of whom I would describe as deeply committed to conservation. I have been frustrated at times, however, by how self-assuredly some of them assert, not only *why* conservation is important, but *how* to do it. (I’m sure part of the frustration stems from feeling like I have often been relegated to the not-technically-qualified-to-have-an-opinion camp.) More egregiously though, I can recall a number of occasions when one or more of these experts dismissed the perspectives of local community members – such as fishermen, farmers, or low-income families – about their own lived environments as ill-informed or resulting from misplaced environmental ethics. It was largely through these experiences that I began to appreciate the notion of multiple, sometimes conflicting, environmentalisms.

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<sup>279</sup> I use the words ‘middle-class’ and ‘liberal’ both in their specifically US contexts, which would best translate as ‘middle-income’ and ‘centre-left’ in British parlance.

I think it was when I learned that the Iñupiat support Coastal Plain development that I began to question my own scientized and politically situated views about ANWR specifically – and to acknowledge that they come from a place of privilege. I hadn't always appreciated that for many underserved communities, including in inner-city Philadelphia, USA where I grew up, environmental concerns are often local, immediate, and rooted in personal experiences of vulnerability or exclusion – which had never been the case for me. We all weigh our environmental priorities differently, and in accordance with the options available to us.

Since embarking on my PhD, I've spent a lot of time thinking about why messages like the ones disseminated by NRDC have resonated so loudly with me, but not at all with many other Americans, particularly given that our collective affluence has been so heavily fossil-fueled. Conversely, how have claims by Arctic Power and others convinced so many Americans, including some of my own friends and family members, of the urgent need to drill, while only encouraging me to dig in my heels?

It has become important to me to exercise a degree of skepticism about the empowered agenda and priorities of mainstream environmentalists, including about precisely whose environmental values and material interests they actually serve. (Notions of 'the social good' are rife with complexity and contradiction.) It has also become crucial in my mind to distinguish between empowered stakeholders who propagate pro-drilling rhetoric, whose agenda I still overwhelmingly view as shortsighted and self-interested, and the individuals who are swayed by it. That rhetoric is powerful, strategic, and targeted after all – as is the rhetoric that has swayed me.

I share these reflective comments somewhat reluctantly, for primarily three reasons. The first is simply that, as others have noted (Kobayashi 2003 in Hopkins 2007, p. 387), it feels self-indulgent and even narcissistic to bring my autobiographical details and emotions into the sphere of research relevance. Speaking *too* personally, in a sense, changes the subject. With this in mind, I have chosen to include my reflective comments as an appendix rather than in the body of the thesis.

The second reason for my reluctance has to do with the tendency of personal reflection to be 'psychologistic' and 'de-politicizing' (Swan 2008) by collapsing the social, cultural, and structural dimensions into the self. It is therefore a source of tension in critical and macro-sociological studies such as mine, which are aimed at

social critique and systemic transformation as opposed to individual behavioral analysis.

Thirdly, I am wary that offering my personal reflections could have the paradoxical effect of re-politicizing the research presented here, by evoking existing stereotypes, prejudices, or other unhelpful associations. Given the already polarized nature of the ANWR conflict, and the bitter partisanship that characterizes US politics generally, to 'out' myself as a liberal, or as an urbanite, or as a middle-class, white, female, thirty-something, self-identified environmentalist (all of which is accurate and at least potentially relevant), feels as much like boxing myself into a pre-defined category as 'locating myself within the research' (Falconer Al-Hindi and Kawabata 2002, p.114).

All of this said, perhaps the most valuable insight enabled by 'the reflexive turn' in the social sciences, and one I fully embrace here, is that we researchers, in acknowledging the power dynamics that surround our production and legitimization of knowledge, must be willing to increasingly relinquish aspects of our control over such processes. On that note, my personal message to you, the reader, is this: The reflexivity project is in your hands now...